ITEM 1

Town of Kittery
Planning Board Meeting
April 12, 2018

459 U.S. Route One – Mixed-use development – Site and Subdivision Preliminary Plan Review
Hold a public hearing, approve or deny application. Owner, DSS Land Holdings, LLC, and applicant, Michael Brigham of Landmark Hill, LLC, requests consideration of a mixed-use development consisting of 26 elderly housing units (reduced from 28), two buildings with retail/commercial units and 16 apartments (reduced from 22 apartments) and one additional commercial/clubhouse building. The six mixed-use commercial/retail/residential buildings shown on previous plans were removed. All are located at 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed Use (MU), Rural-Residential (R-RL) and Shoreland Overlay Zone. (OZ-SL) Agent is Ken Wood, Attar Engineering.

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
YES	Sketch Plan	Scheduled for September 14, 2017, approved on October 12, 2017	APPROVED
NO	Site Visit	Held April 3, 2018 at 11:00 am	HELD
YES	Preliminary Plan Review Completeness/Acceptance	February 8, 2018	APPROVED
YES	Public Hearing	Scheduled for April 12, 2018	PENDING
YES	Preliminary Plan Approval	Possible for April 12, 2018	PENDING
YES	Final Plan Review and Decision	TBD	TBD
Applicant: Prior to the signing of the approved Plan any **Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS.** As per Section 16.4.4.13 - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.			

Background

This is a preliminary plan review for a proposed mixed-use development located at 459 State Route 1 in the Mixed Use (MU) Zone, previously approved as the Sowerby mixed use in 2008. Since then the six residential lots have been conveyed and developed with single-family homes. As part of this development, a sewer force main has been installed connecting the lots to public sewer in Route 1 via an easement that burdens this property. There are also wetlands on the property.

The applicant is proposing 26 elderly single-family housing units, two buildings with first-floor office/retail and 16 second-floor apartment residential uses and one building split between commercial use and a club house. Office and/or retail on first floors and residential uses on the upper floors of a mixed-use building, the proposed elderly housing as well as single retail uses of less than 50,000 square feet are all permitted in the Mixed Use (MU) Zone. The elderly housing is a Special Exception Use.

The Board approved the sketch plan on October 12, 2017 and reviewed the preliminary plan for completeness on January 11, 2018. The Board found the application complete on February 8, 2018. On March 22, 2018 the Board set a date for a site walk (an earlier site walk had to be postponed) and the public hearing. A site walk was held on April 3, 2018. Comments on the revised preliminary plan and submission are below.

Staff Review

February 8, 2018 meeting: the Applicant included narrative describing how the elderly single-family housing special exception use meets the requirements of 16.3.2.13.G as requested by the Board. At this meeting the Board discussed moving two of the stormwater ponds out of the 100-foot setback and wanted to see the net residential calculations include travel ways and parking areas. The Board found the application complete at this meeting.

March 22, 2018 meeting: the Applicant's agent briefed the Board on the plan revisions the Board could expect to see on the plans submitted for this meeting. These revisions are primarily the result of the net residential acreage calculations including travel ways and parking areas being applied.

Special Considerations: The applicant is requesting that the Board consider granting a 50-foot extension of the MU Zone which would allow the entire parcel to be considered under the MU Zone. The applicant addressed the 7 conditions found in 16.7.2.5 that the Board must consider in order to grant this request in the original submission letter. The Board also has the option of requesting additional information or a study from the applicant when considering this request. Staff recommends that the Board request a no-cut buffer around the wetlands of special significance.

CMA Review: CMA's review is included in the packet.

Review Considerations

1. The proposed development consists of two primary types of buildings: two mixed-use buildings with first floor commercial space and parking and 16 dwelling unit apartments on the upper floors and the 26 single-family elderly housing units along a new street. Maintenance of the stormwater management systems must be assignable to an entity or an owner. It appears that two associations will be created: a condominium association and a development association.
2. The net residential calculations shown in General Note 6 on Sheet 1 now subtract the amount of travel way and parking proposed and the sewer easement per 16.7.8.2.
    a. Plan Sheet 1.1's final net residential density statement appears incorrect. Assuming the net residential area is correct after subtracting the wetlands, hydric soils, travel ways, sewer easement and parking, the Net Residential Density statement should read:

        437,714.7 – (26 x 10,000) – (16 x 10,000) = 420,000 as the 26 elderly single-family homes each require 10,000 sf of land area as do each of the 16 apartments.
3. From previous staff notes*: the preliminary plan design should, as it continues to integrate the elderly housing within the mixed-use development, provide for opportunities for common space to congregate and enjoy some outdoor space adjacent to some staple facilities that may cater to the over 55 community as well as to the other residents on site.*

    In this preliminary plan submission, the applicant has provided a building with a first-floor club house, while the second floor will be commercial. There are trails shown in the open space and a passive recreation area which includes part of the sewer easement. See Plan Sheet 1.2.

    a. One part of the trail is shown moving off the subject property to the north onto another parcel. Is this an existing trail?

    The Applicant submitted a narrative for the February 11, 2018 meeting as requested by the Board to demonstrate how the proposed elderly single-family housing meets 16.3.2.13.G.
4. Wetlands on-site to the north and east are associated with an existing natural pond to the north which qualifies them per Article 16.9.3.1.B as being wetlands of special significance (WoSS). The site is also within the MS-4 area. Kittery's wetland regulations are stricter than the State's.

The stormwater ponds associated with the WoSS have been moved outside the 100-foot buffer for the most part (see a. below). The remaining stormwater ponds are located at least 25 feet from the wetlands to the west which are not WoSS. Their locations have been reviewed by DEP although a permit may not have been issued yet. Staff has spoken with the DEP staff person who is doing the permitting for this project and is satisfied with the stormwater ponds' location.

a. Some grading of stormwater pond #40 and #10 will be within the 100-foot setback for the WoSS. Is the long "tail" of pond #40 only grading? Similarly pond #20 has a long narrow "tail".

b. A portion of the parking area for the commercial/clubhouse building labeled C1 is within the 100-foot setback for the WoSS. Can this parking area be redesigned to stay within the setbacks or could one of the other parking areas add one or two spaces so that this parking area could be downsized to stay within the WoSS setbacks? See Note 10 also.

5. As proposed, the elderly single-family units are 3 BR 2,800 sf. The apartments are 2 BR with a single 3 BR unit on the top floor of each building. There is 4,000 sf of commercial space in each of the two buildings labeled A1 and A2. The C1 building has 2,000 sf of commercial space on the second floor with a 2,000 sf clubhouse on the first floor.

6. The example rendering of the proposed mixed-use buildings seem to show residential-only buildings.

7. All buildings will be sprinkled.

8. From previous plan notes*: A minimum of one street tree must be planted for each 25 feet of street frontage and 10 shrubs or flowering perennials per 40 feet of street frontage. Staff estimates the parcel has over 1,500 feet of frontage, therefore 60 street trees and 375 shrubs/flowering perennials are required.*

   A landscaping plan was submitted – the required 30 foot planter strip along Route 1 includes 476 plants: 66 sugar maple and red oak trees and 410 shrubs, the species of which are not named. Note 10 on Plan Sheet 1.1 gives spacing details which meet requirements. There are also red oaks and a few green ash trees scattered throughout the development, including along parking area edges and white pines along the wetland edges. This planter strip will also serve to screen the parking lot. The large parking area has 6 London plane trees in a landscaped strip that divides the parking lot and three more trees (one has a symbol for London plane but it is labeled as a red oak.) along the western side. The other parking lots have trees scattered along the edges. Section 16.8.9.4.G requires 1 tree per eight parking spaces – all parking areas meet the requirements.

9. A traffic impact report was submitted for the February 8th meeting. The traffic impact analysis submitted gave additional information including average daily traffic for the various uses. Traffic patterns are indicated on the plans and show two-way traffic through the property. Plan Sheet 1.4 shows that the ingress/egress shared with the medical office next door whose existing driveway will be abandoned will have a left turning lane for exiting onto Route 1. The updated traffic impact analysis also cited the south-bound left turn lane added to Route 1 for turning onto Lewis Road. No north-bound left turn lane was added although it was a part of the former Sowerby project's permitting in 2008 by ME DOT. Route 1 north-bound appears to have space for a left turn lane that is currently yellow striped (probably because the 2008 project was never built). The Sowerby project as approved included a hotel, convenience store, restaurants and commercial space.

   a. Lewis Road is directly opposite the proposed main entrance to the Homestead development. Will this affect traffic flow?

b. Has the ME DOT entrance permitting process begun? If so, what comments has DOT made so far? What is the process to create that the north-bound left turn lane?

10. As shown on the plans, there are 137 parking spaces. Parking requirements are broken down as follows on Plan Sheet 1.1:

    Elderly housing = 1.5 spaces/unit for 26 units = 39 (driveways)

    Apartments = 2 spaces/unit for 16 units = 32

    Retail (A1/A2) = 8,000 sf divided by 175 sf/parking space = 46

    Retail (C1) = 2,000 sf divided by 175 sf/space = 12

    Office (C1) = 2,000 sf divided by 250 sf/unit = 8

    a. The elderly single-family housing as proposed appear to be larger than 2 bedrooms (at 2,800 sf and 3 BR) which would require 2 parking spaces per dwelling unit. Staff (including the CEO) believes that the elderly housing single-family residential units may count a single-car garage and a driveway of sufficient length to accommodate a parked car without blocking sidewalks or extending beyond the curb where no sidewalks exist for the two parking spaces. Will parking be allowed on the street?

    b. The clubhouse is shown with the 8 parking spaces required per *Offices, professional and public buildings*, but two more spaces are also required because 16.8.9.4.D Off-Street Parking Standards states that "*two parking spaces for each office unit plus 1 space for each 250 feet of gross floor area*".

    c. Staff has provided a sample parking program below:

       Elderly housing = 1 single-car garage + driveway/unit for 26 units = 52 spaces

       Apartments = 2 spaces/unit for 16 units = 32 spaces

       Retail (A1/A2) = 8,000 sf divided by 175 sf/space = 46 parking spaces

       Retail (C2) = 2,000 sf divided by 175 sf/space = 12 spaces

       Office/Public building (C1) = 2,000 sf divided 250/unit + 2 spaces = 10 spaces

       This totals 100 parking spaces that would need to be provided. The single-family units would be providing parking through garages and driveways. The submission is short the two spaces mentioned earlier for an office/professional/public building.

    d. Because the clubhouse is located on-site for use by the residents on-site, the Applicant may request parking relief and/or a joint use parking plan. Use of the clubhouse would likely often occur during off-hours for the commercial uses. A parking waiver may be granted by the Planning Board (rather than the Board of Appeals) in this case because the clubhouse use is not listed in the parking table per 16.8.9.4.C. The "public building" use is the closest thing to a clubhouse. A joint use parking plan would need to be reviewed and approved by the Board of Appeals because it would involve the commercial uses which are listed specifically in the parking table.

11. Snow storage is shown – all four proposed locations are located at an acceptable distance from stormwater ponds and wetlands although Staff would prefer the snow dump near the passive recreation area be located on the other side of the street.

12. Open space requirements appear to be met per 16.3.2.13.D as is the 10% minimum use requirement per 16.3.2.13.D.4.

13. The plan sheets show the Map and Lot as Map 24, Lot 60 when it is Map 60 Lot 24. Also Sheet 1.1 shows a discrepancy in the scale in the title block and the scale on the plan itself.
14. On Plan Sheet 2.1 and perhaps others, an arrow labeled "retaining wall" does not seem to point to anything. Is there a wall proposed?
15. The Applicant states that the road will remain private – a note should be added to Plan Sheet 1.1 indicating that the roads will remain private and the Town has no responsibility for maintenance or repair of the roads, snow plowing or stormwater system maintenance.
16. It came to Staff's attention that a conservation area was created for protection of wetlands and the pond when the original 2008 Sowerby application was approved. This conservation area is noted in deeds for the Lots 2, 3 and 6 (abutting parcels to the northeast which were part of that original approval). Similarly, there should be a conservation area created 100 feet from the pond on the Homestead parcel. The conservation area will need to be shown on the plans, noted in the homeowner's association document and marked appropriately on the ground after final approval. This area is not proposed for development by the Applicant so is mostly a matter of documentation.

Recommendation
This step of preliminary plan review which includes the public hearing, provides the Board an opportunity to hear any comments from the public and to discuss the content of the plans, submission materials, staff comments and CMA's review.

1. Based on Title 16 and as shown in the review notes, the plan as submitted meets the necessary requirements except for two minor items:
    a. parking requirements for 100 parking spaces when 98 are shown which could be waived
    b. the parking area encroaching on the 100-foot WoSS setback should be moved outside the setback – this could be accomplished by seeking parking relief and/or by design changes.

The Board may wish to give the Applicant additional time to address CMA's comments and the parking issues (suggested motion below). Staff recommends that the Board give the Applicant 90 days as allowed per 16.10.5.4. Planning Board Review Schedule.

Move to continue the preliminary site and subdivision plan application dated March 28, 2018 from applicant, Michael Brigham of Landmark Hill, LLC, for 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed Use Zone not to exceed 90 days.

If the Board decides additional time is not needed, the Board will want to vote on whether or not to approve the preliminary plan, likely with conditions based on CMA's review and staff's recommendations. That motion is below.

Move to approve the preliminary site and subdivision plan application dated March 28, 2018 from applicant, Michael Brigham of Landmark Hill, LLC, for 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed Use Zone with these conditions [state the conditions].

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April 5, 2018

Kathy Connor, Town Planner
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

RE: Town of Kittery, Planning Board Services
Site Plan Review Application-The Homestead 459 U.S. Route 1 (Tax Map 60, Lot 24)
CMA #591.115

Dear Ms. Connor:

CMA Engineers received the following information for Assignment #115, review of the site plan application for property at 459 U.S. Route 1:

1) "The Homestead Subdivision, U.S. Route 1 Kittery, Maine", prepared for Landmark Hill, LLC, 79 Congress Street Portsmouth, NH by Attar Engineering, Inc., 1284 State Road, Eliot, Berwick, ME 03903 dated January18, 2018 and revised March 27, 2018.
2) "459 U.S. Route 1-Kittery, Preliminary Plan Application" by Attar Engineering, Inc., 1284 State Road, Eliot, Berwick, ME 03903 dated December 18, 2017 and revised January 17, 2018.
3) "The Homestead- Mixed Use Development, U.S. Route 1, Kittery, Maine, Stormwater Management Plan" Landmark Hill Square Subdivision Additions to Multi-Use Buildings 518 U.S. Route 1 Kittery, Maine", by Attar Engineering, Inc., 1284 State Road, Eliot, Berwick, ME 03903 dated March 28, 2018.
4) "Addendum to Traffic Assessment Report, The Homestead-459 U.S. Route 1, Kittery, Maine", by Attar Engineering, Inc., 1284 State Road, Eliot, Berwick, ME 03903 dated January 16, 2018.

We have reviewed the information submitted for conformance with the Kittery Land Use and Development Code Zoning Ordinance and general engineering practices and offer the comments below that correspond directly to the Town's Ordinances. The project is in the Mixed Use, Residential-Rural and Shoreland Overlay Zone districts.

16.3.2.1 Residential-Rural (R-RL)
Several proposed uses (retail, office) are neither permitted or special exception uses in the R-RL zone, however no development is proposed in this portion of the site.

16.3.2.13 Mixed Use (MU)
B&C. All proposed uses are permitted or special exception uses.

D.2. In note 4 on Sheet 1.1, the applicant should list the provided setbacks, frontage and lot size in addition to the required zoning information. However, it appears that the applicant has met all minimum dimensional standards.

D.7.a.ii. It appears that the applicant has met the required number of streetside trees, but the Board should review if clustering them so tightly together meets the intent of the Ordinance and will permit the trees to grow to maturity.

16.3.2.17 Shoreland Overlay Zone (OZ-SL)
There is no proposed development within the overlay.

We note that the applicant has requested a 50' Mixed Use zone boundary extension under 16.7.2.5. It appears that the applicant's justification is approvable if the board desires. We note that we are unsure why the zone boundary extension is requested.

16.7 General Development Requirements
Article II. Conformity
16.7.2.5 The applicant has requested a 50' Mixed Use zone boundary extension. It appears that this request is supportable. We are not sure of the motivation for the extension.

Article VIII. Net Residential Acreage
16.7.8.2 It is not clear where the reduction from 10,000 sf to 7,500 sf minimum land area per dwelling unit for the 16 apartment units is derived. We note that if the 10,000 sf is used there is still enough net residential acreage to support all the proposed units.

16.8 Design and Performance Standards-Built Environment
Article IV. Streets and Pedestrian Ways/Sidewalks Site Design Standards
16.8.4.2.F. There are two proposed entrances within 1000' of each other. The applicant should apply for a waiver.
16.8.4.3. The Traffic Report and Addendum do not directly address traffic counts within the development (traffic entering and exiting U.S. Route 1 is evaluated). The streets have been designed mostly to Minor Street standards with smaller shoulders (no paved shoulders provided but wider gravel shoulders than required). The applicant should justify the roadway design and apply for a waiver from street design standards if necessary.
16.8.4.4. The Traffic report and Addendum do not directly address traffic counts within the development (traffic entering and exiting U.S. Route 1 is evaluated). The streets have been designed mostly to Minor Street standards with smaller shoulders (no paved shoulders provided but wider gravel shoulders than required). The applicant should justify the roadway design and apply for a waiver from street design standards if necessary.

The applicant should include the width of the right-of-way on the roadway detail.

Article VI.: Water Supply

16.8.6.1 The applicant should show the existing water main location in U.S. Route 1 and provide information on main material and size.
Proposed water service locations and curb stops should be shown on the plans.
Show how the existing relocated hydrant will tie in to the existing or proposed water main. Is this the only hydrant for the site?
Water service detail calls out the main as PVC not ductile iron.

Article VII.: Sewage Disposal

16.8.7.1 The proposed sewer main size and material should be labelled on the plan and details should be provided.
Proposed sewer service and cleanout locations should be shown on the plan.
The proposed location of the sewer main and manholes is not clear-some manholes are in the sidewalk, in driveways, in the grass and potentially outside of the right-of-way. The applicant should justify the location of the main and manholes.
The pipe lengths and slopes should be included on the roadway profile.

Article VIII. Surface Drainage

The proposed stormwater management system limits post development flows to levels lower than pre-development flows and is appropriate for this site, however we have the following minor comments:

- Pipe sizes should be included on the drainage structure schedule.
- The detail for Underdrained Soil Filter Pond 40P shows an incorrect invert out (50.03').

16.8.8.2.D. The O&M manual should conform with the provisions of the post construction stormwater management plan.

Article IX: Parking. Loading and Traffic

16.8.9.1.E. Traffic flow in parking areas needs to be marked with signs and/or surface directions.
16.8.9.4.B. Parking space and aisle dimensions should be indicated on the plans.
16.9.4.D. The 560-sf commercial/office areas on the first floor of the single-family homes do not appear to be included in the parking calculations.
16.8.9.4.D.I.1 The applicant should show dimensions of the accessible parking spaces on the plans.
16.8.9.4.D.I.3 It is not clear that there is an accessible route to connect to the clubhouse.
16.8.9.4.G. The applicant should show that the required number of parking landscaping trees have been provided.

Article X. Signs

The Applicant should submit details of proposed signs for CEO approval.

Article XXIV. Exterior Lighting

The Applicant should provide lighting details (mounting height, uniformity ratios, etc.) to demonstrate conformance with the Ordinance.

General Comments

1. The applicant should provide an existing conditions plan.
2. There are discrepancies in supporting documentation about the number of units proposed.
3. There are leaders on Sheet 2.1 that do not point to anything and do not seem to apply (12" HDPE, retaining wall, 50' wetland setback).
4. There doesn't appear to be access to the dumpster pad.
5. Who is the dumpster intended for?
6. There are items in the legend that are not on the plans (retaining wall, etc.)
7. Where is the location of the timber guardrail?
8. The plans should clearly show which units have 560 sf of commercial/office space.

Should you have any questions, please do not hesitate to call.

Very truly yours,

CMA ENGINEERS, INC.

Jodie Bray Strickland, P.E.
Project Engineer

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Kathy Connor
Contract Planner
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

March 28, 2018
Project No.: C052-18

Re: 459 US Route 1 - Kittery
Revisions

Dear Ms. Connor:

On behalf of Michael Brigham, President of Landmark Hill, LLC, I have enclosed a revised Site Plan, Grading Plan, Stormwater Plan and Pond Plans for your review and consideration. The site is located on 459 US Route 1 in the Mixed Use District and is described by the Town of Kittery Assessor's Map 60 as Lot 24. The parcel contains 20 +/- acres and is located in the Mixed-Use (MU) District. The plan-set is attached.

Please contact me for any additional information or clarifications required.

Sincerely,

Kenneth A. Wood, P.E.
President

cc: Landmark Hill, LLC

C052-18 Kittery Site App Cover & Summary.doc

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THE HOMESTEAD – MIXED USE DEVELOPMENT
U.S. ROUTE 1, KITTERY, MAINE
STORMWATER MANAGEMENT STUDY

Project No.: C052-18 March 28, 2018

♦ Scope

This stormwater management plan has been prepared for The Homestead, a proposed mixed-use development, located on U.S. Route 1, Kittery, Maine. The entire parcel contains approximately 20 acres; the development will include residential units (elderly and market rate units), retail and office space. The project requires a Site Location of Development permit amendment from the Maine Department of Environmental Protection (MDEP) and must meet the Stormwater Management requirements for the Town of Kittery. The project will create approximately 9.8 acres of developed area and approximately 3.7 acres of impervious area.

♦ Site and Watershed Description

The project site is located in the Libby Brook and Johnson Brook watershed. Libby Brook is tributary to York River and ultimately, the Atlantic Ocean. Johnson Brook is tributary to Dolly Gordon Brook, York River and ultimately, the Atlantic Ocean. The York River and portions of Libby Brook and Dolly Gordon Brook are tidal. A 7½ minute series U.S.G.S. map of the project area is attached.

The existing site is developed with a 14,000 S.F. structure (abandoned nursing home) and associated driveways and parking. The remainder of the lot contains woodlands and wetlands.

As mentioned above, the site is located in the watershed of Libby Brook and Johnson Brook; approximately 75% of the site drains toward Libby Brook, which is located on the northwest side of Interstate Route 95. Johnson Brook is located on the southeast side of U.S. Route 1. On site runoff sheet flows across upland areas and several wooded wetlands prior to discharge toward the brooks. The northwest portion of the site contains a small pond with associated wetlands. The topography of the site is gently rolling with several steeper slopes. The majority of grades on-site are from near level to 8%; some areas contain slopes ranging to 15%. A small portion of this site is subject to flooding, see the Site Plan for the 100 year flood zone as determined by the Federal Emergency Management Agency (FEMA). No development is proposed within the 100 year flood zone.

♦ Soils/Hydrologic Soil Groups

Soil types and their respective Hydrologic Soil Groups (HSG) were determined from a Class A High Intensity Soil Survey (HISS) prepared by Michael Cuomo, CSS, SE for this development. On site soil types consist of Biddeford Mucky Peat (Bm), Biddeford-Scantic (Bs), Dixfield (Dx), Elmwood (Em), Scantic (Sc), Lyman-Turbridge (LT), Swanton (Sw) and Westbury (Ws) soils. The Scantic, Biddeford, and Biddeford - Scantic soils are hydric, or wetland soils. Hydrologic Soil Groups (HSG's) range from "C" to "D" for these soil types. Off-site soil types and their HSG's were determined from the Soil Survey of York County, Maine.

♦ **Methodology**

The stormwater quantity analysis will be conducted using the HydroCAD Stormwater Modeling System by Applied Microcomputer Systems. The analysis determines the "Existing Condition" and "Developed Condition" stormwater flows. Both cases are analyzed for the 2, 10 and 25-year, 24-hour frequency storm events. The Existing Condition analyzes the site as it currently exists and the Developed Condition models the site with the proposed improvements described above.

♦ **Water Quantity Analysis**

Existing Condition

The site was divided into four subcatchments (SC) for the Existing Condition analysis. SC 1 is tributary to a wetland and property line at the west side of the site (Analysis Point 1). SC's 2 and 4 are tributary to a wetland and existing pond at the north part of the site (Analysis Point 2). SC 4 includes off-site areas that were part of a 2008 subdivision which created residential lots along Adams Road. This area is assumed to be undeveloped for the Existing Condition analysis. SC 3 is tributary to a wetland on the southeast part of the site, adjacent to Route 1 (Analysis Point 3).

AP's 1 and 2 are tributary to Libby Brook.

The AP's were selected to provide convenient points to compare Existing Condition flows to Developed Condition flows.

Developed Condition

The Developed Condition analysis consists of 20 subcatchments. Other features such as ponds and reaches were added to account for on-site routing and detention of stormwater. Five underdrained soil filter ponds (USF's) are proposed to provide both stormwater detention and treatment. Calculations are provided to show the required Channel Protection Volume (CPV) and area for each USF. All Developed Condition flows were routed to the Analysis Points described above.

Changes in Stormwater Flows

Tables showing Existing Condition peak flows, Developed Condition peak flows and the change in peak flow from Existing Condition to Developed Condition are presented on a separate page.

The analysis indicates decreases in peak flow at AP's 1 and 2 for all storm events, thus no adverse effects on downstream properties or drainage structures are anticipated.

Runoff from the USF ponds will be routed through outlet structures, pipes and level spreaders prior to discharge to undisturbed, on-site areas.

♦ **Water Quality**

In accordance with the MDEP *Chapter 500* General Standards, runoff from developed areas on the site will receive treatment in USF ponds prior to being discharged into on-site wetlands. Approximately 95.7% of the impervious area and 98.4% of the developed area will be treated, exceeding the MDEP General Standards requirements of 95% and 80%, respectively. Treatment calculations and USF sizing calculations are included in this report.

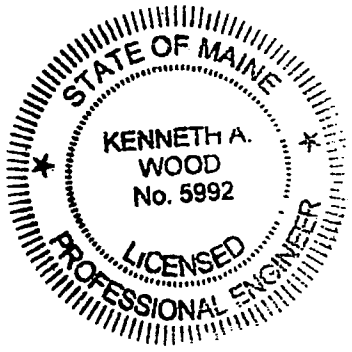
♦ **Summary**

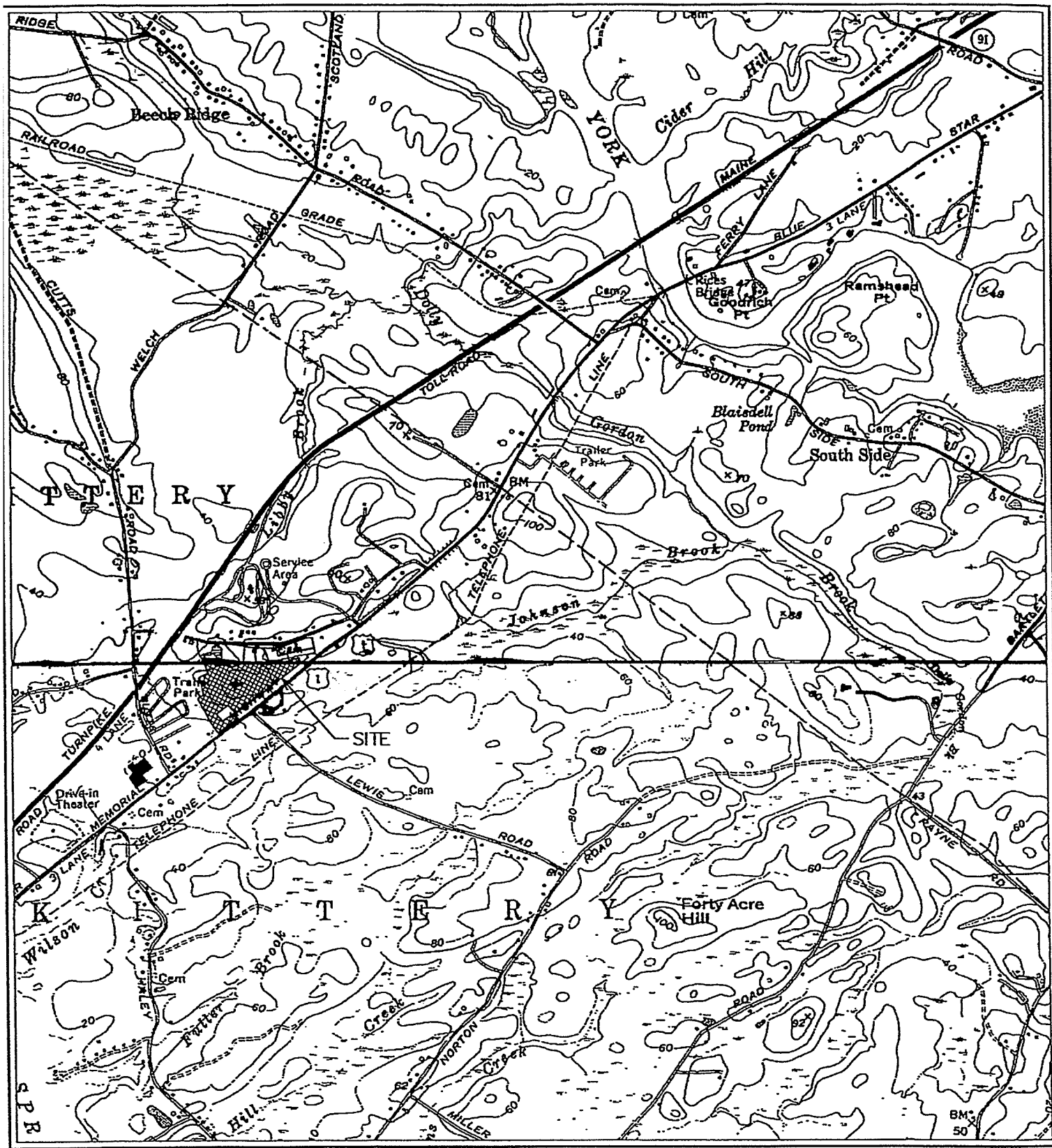
The use of USF ponds to attenuate peak flows will result in no significant increase in peak runoff quantity from the proposed development. No adverse effects are anticipated on any downstream properties or drainage structures for the analyzed storm events. Runoff quality is addressed by the use of Underdrained Soil Filter Ponds.

Sincerely;

Kenneth A. Wood, P.E.
President

C052-17 SW Landmark.doc





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1284 STATE ROAD, ELIOT ME 03903

LOCATION MAP

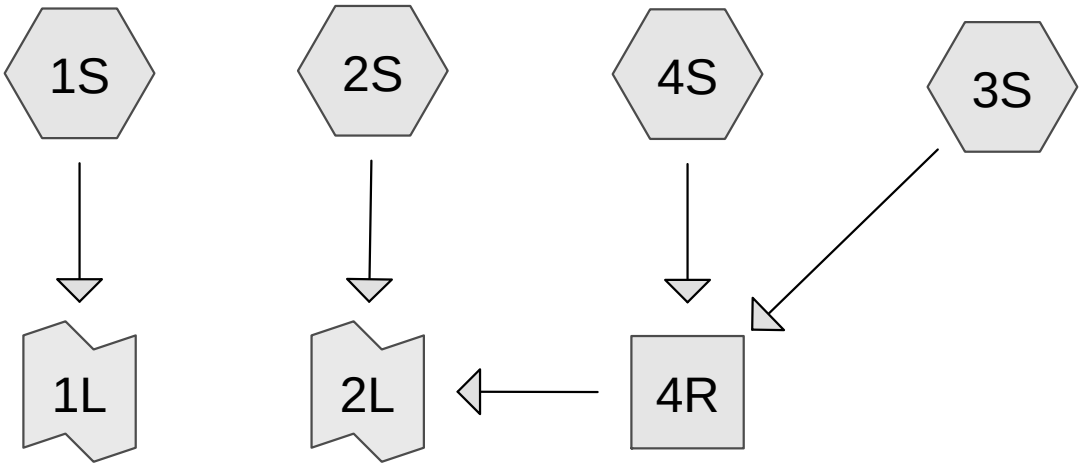
THE HOMESTEAD

USGS 7.5 MINUTE SERIES

YORK HARBOR AND KITTERY QUADRANGLE

SCALE: 1" = 2,000'

EXISTING CONDITION CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for MICHAEL BRIGHAM EXT
Prepared by Hewlett-Packard Company, Printed 3/28/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.114	70	Woods, Good, HSG C (1S, 2S, 4S)
1.485	71	Meadow, non-grazed, HSG C (4S)
7.961	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S)
0.454	77	Woods, Good, HSG D (1S, 4S)
0.351	78	Meadow, non-grazed, HSG D (4S)
1.859	98	Paved parking & roofs (1S, 2S, 3S, 4S)
17.223	**75**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=391,549 sf 16.15% Impervious Runoff Depth>1.18"
Flow Length=382' Tc=9.2 min CN=77 Runoff=11.63 cfs 0.883 af

Subcatchment 2S: Runoff Area=158,216 sf 4.69% Impervious Runoff Depth>0.95"
Flow Length=293' Tc=6.7 min CN=73 Runoff=4.05 cfs 0.289 af

Subcatchment 3S: Runoff Area=38,310 sf 10.37% Impervious Runoff Depth>1.12"
Flow Length=190' Tc=6.5 min CN=76 Runoff=1.18 cfs 0.082 af

Subcatchment 4S: Runoff Area=162,142 sf 3.93% Impervious Runoff Depth>0.95"
Flow Length=388' Tc=9.7 min CN=73 Runoff=3.75 cfs 0.296 af

Reach 4R: Avg. Flow Depth=0.77' Max Vel=1.07 fps Inflow=4.80 cfs 0.378 af
n=0.080 L=60.0' S=0.0083 '/' Capacity=8.48 cfs Outflow=4.70 cfs 0.377 af

Link 1L: Inflow=11.63 cfs 0.883 af
Primary=11.63 cfs 0.883 af

Link 2L: Inflow=8.31 cfs 0.666 af
Primary=8.31 cfs 0.666 af

Total Runoff Area = 17.223 ac Runoff Volume = 1.549 af Average Runoff Depth = 1.08"
89.21% Pervious = 15.363 ac 10.79% Impervious = 1.859 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=391,549 sf 16.15% Impervious Runoff Depth>2.36"
Flow Length=382' Tc=9.2 min CN=77 Runoff=23.54 cfs 1.767 af

Subcatchment 2S: Runoff Area=158,216 sf 4.69% Impervious Runoff Depth>2.04"
Flow Length=293' Tc=6.7 min CN=73 Runoff=8.95 cfs 0.616 af

Subcatchment 3S: Runoff Area=38,310 sf 10.37% Impervious Runoff Depth>2.28"
Flow Length=190' Tc=6.5 min CN=76 Runoff=2.45 cfs 0.167 af

Subcatchment 4S: Runoff Area=162,142 sf 3.93% Impervious Runoff Depth>2.03"
Flow Length=388' Tc=9.7 min CN=73 Runoff=8.29 cfs 0.631 af

Reach 4R: Avg. Flow Depth=1.11' Max Vel=1.35 fps Inflow=10.47 cfs 0.798 af
n=0.080 L=60.0' S=0.0083 '/' Capacity=8.48 cfs Outflow=10.31 cfs 0.797 af

Link 1L: Inflow=23.54 cfs 1.767 af
Primary=23.54 cfs 1.767 af

Link 2L: Inflow=18.40 cfs 1.413 af
Primary=18.40 cfs 1.413 af

Total Runoff Area = 17.223 ac Runoff Volume = 3.181 af Average Runoff Depth = 2.22"
89.21% Pervious = 15.363 ac 10.79% Impervious = 1.859 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=391,549 sf 16.15% Impervious Runoff Depth>3.41"
Flow Length=382' Tc=9.2 min CN=77 Runoff=33.88 cfs 2.556 af

Subcatchment 2S: Runoff Area=158,216 sf 4.69% Impervious Runoff Depth>3.03"
Flow Length=293' Tc=6.7 min CN=73 Runoff=13.34 cfs 0.917 af

Subcatchment 3S: Runoff Area=38,310 sf 10.37% Impervious Runoff Depth>3.32"
Flow Length=190' Tc=6.5 min CN=76 Runoff=3.55 cfs 0.243 af

Subcatchment 4S: Runoff Area=162,142 sf 3.93% Impervious Runoff Depth>3.03"
Flow Length=388' Tc=9.7 min CN=73 Runoff=12.35 cfs 0.938 af

Reach 4R: Avg. Flow Depth=1.39' Max Vel=1.47 fps Inflow=15.53 cfs 1.181 af
n=0.080 L=60.0' S=0.0083 '/' Capacity=8.48 cfs Outflow=15.30 cfs 1.180 af

Link 1L: Inflow=33.88 cfs 2.556 af
Primary=33.88 cfs 2.556 af

Link 2L: Inflow=27.67 cfs 2.097 af
Primary=27.67 cfs 2.097 af

Total Runoff Area = 17.223 ac Runoff Volume = 4.654 af Average Runoff Depth = 3.24"
89.21% Pervious = 15.363 ac 10.79% Impervious = 1.859 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=391,549 sf 16.15% Impervious Runoff Depth>3.41"
Flow Length=382' Tc=9.2 min CN=77 Runoff=33.88 cfs 2.556 af

Subcatchment 2S: Runoff Area=158,216 sf 4.69% Impervious Runoff Depth>3.03"
Flow Length=293' Tc=6.7 min CN=73 Runoff=13.34 cfs 0.917 af

Subcatchment 3S: Runoff Area=38,310 sf 10.37% Impervious Runoff Depth>3.32"
Flow Length=190' Tc=6.5 min CN=76 Runoff=3.55 cfs 0.243 af

Subcatchment 4S: Runoff Area=162,142 sf 3.93% Impervious Runoff Depth>3.03"
Flow Length=388' Tc=9.7 min CN=73 Runoff=12.35 cfs 0.938 af

Reach 4R: Avg. Flow Depth=1.39' Max Vel=1.47 fps Inflow=15.53 cfs 1.181 af
n=0.080 L=60.0' S=0.0083 '/' Capacity=8.48 cfs Outflow=15.30 cfs 1.180 af

Link 1L: Inflow=33.88 cfs 2.556 af
Primary=33.88 cfs 2.556 af

Link 2L: Inflow=27.67 cfs 2.097 af
Primary=27.67 cfs 2.097 af

Total Runoff Area = 17.223 ac Runoff Volume = 4.654 af Average Runoff Depth = 3.24"
89.21% Pervious = 15.363 ac 10.79% Impervious = 1.859 ac

Summary for Subcatchment 1S:

Runoff = 33.88 cfs @ 12.13 hrs, Volume= 2.556 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
63,230	98	Paved parking & roofs
254,644	74	>75% Grass cover, Good, HSG C
60,474	70	Woods, Good, HSG C
13,201	77	Woods, Good, HSG D
391,549	77	Weighted Average
328,319		83.85% Pervious Area
63,230		16.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0300	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
4.3	332	0.0678	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.2	382	Total			

Summary for Subcatchment 2S:

Runoff = 13.34 cfs @ 12.10 hrs, Volume= 0.917 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
7,416	98	Paved parking & roofs
57,790	74	>75% Grass cover, Good, HSG C
93,010	70	Woods, Good, HSG C
158,216	73	Weighted Average
150,800		95.31% Pervious Area
7,416		4.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.0450	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
2.5	243	0.1070	1.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.7	293	Total			

Summary for Subcatchment 3S:

Runoff = 3.55 cfs @ 12.10 hrs, Volume= 0.243 af, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
3,974	98	Paved parking & roofs
34,336	74	>75% Grass cover, Good, HSG C
38,310	76	Weighted Average
34,336		89.63% Pervious Area
3,974		10.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.7	140	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.5	190	Total			

Summary for Subcatchment 4S:

Runoff = 12.35 cfs @ 12.14 hrs, Volume= 0.938 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
6,365	98	Paved parking & roofs
64,674	71	Meadow, non-grazed, HSG C
15,277	78	Meadow, non-grazed, HSG D
69,262	70	Woods, Good, HSG C
6,564	77	Woods, Good, HSG D
162,142	73	Weighted Average
155,777		96.07% Pervious Area
6,365		3.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
2.0	338	0.0355	2.83		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.7	388	Total			

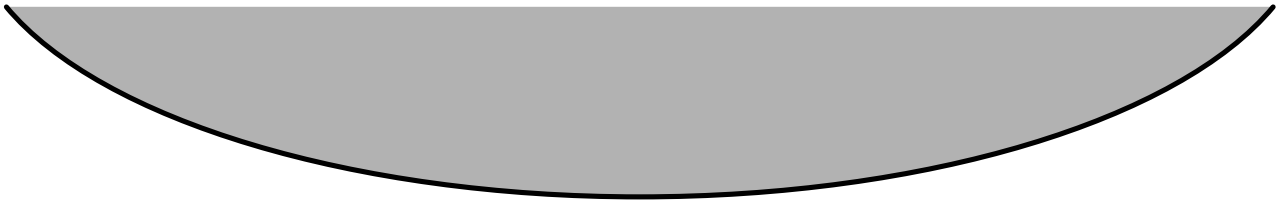
Summary for Reach 4R:

Inflow Area = 4.602 ac, 5.16% Impervious, Inflow Depth > 3.08" for 25 YEAR STORM event
Inflow = 15.53 cfs @ 12.13 hrs, Volume= 1.181 af
Outflow = 15.30 cfs @ 12.15 hrs, Volume= 1.180 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.47 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.57 fps, Avg. Travel Time= 1.8 min

Peak Storage= 634 cf @ 12.14 hrs
Average Depth at Peak Storage= 1.39'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 8.48 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.080
Length= 60.0' Slope= 0.0083 '/'
Inlet Invert= 52.00', Outlet Invert= 51.50'



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Summary for Link 1L:

Inflow Area = 8.989 ac, 16.15% Impervious, Inflow Depth > 3.41" for 25 YEAR STORM event
Inflow = 33.88 cfs @ 12.13 hrs, Volume= 2.556 af
Primary = 33.88 cfs @ 12.13 hrs, Volume= 2.556 af, Atten= 0%, Lag= 0.0 min

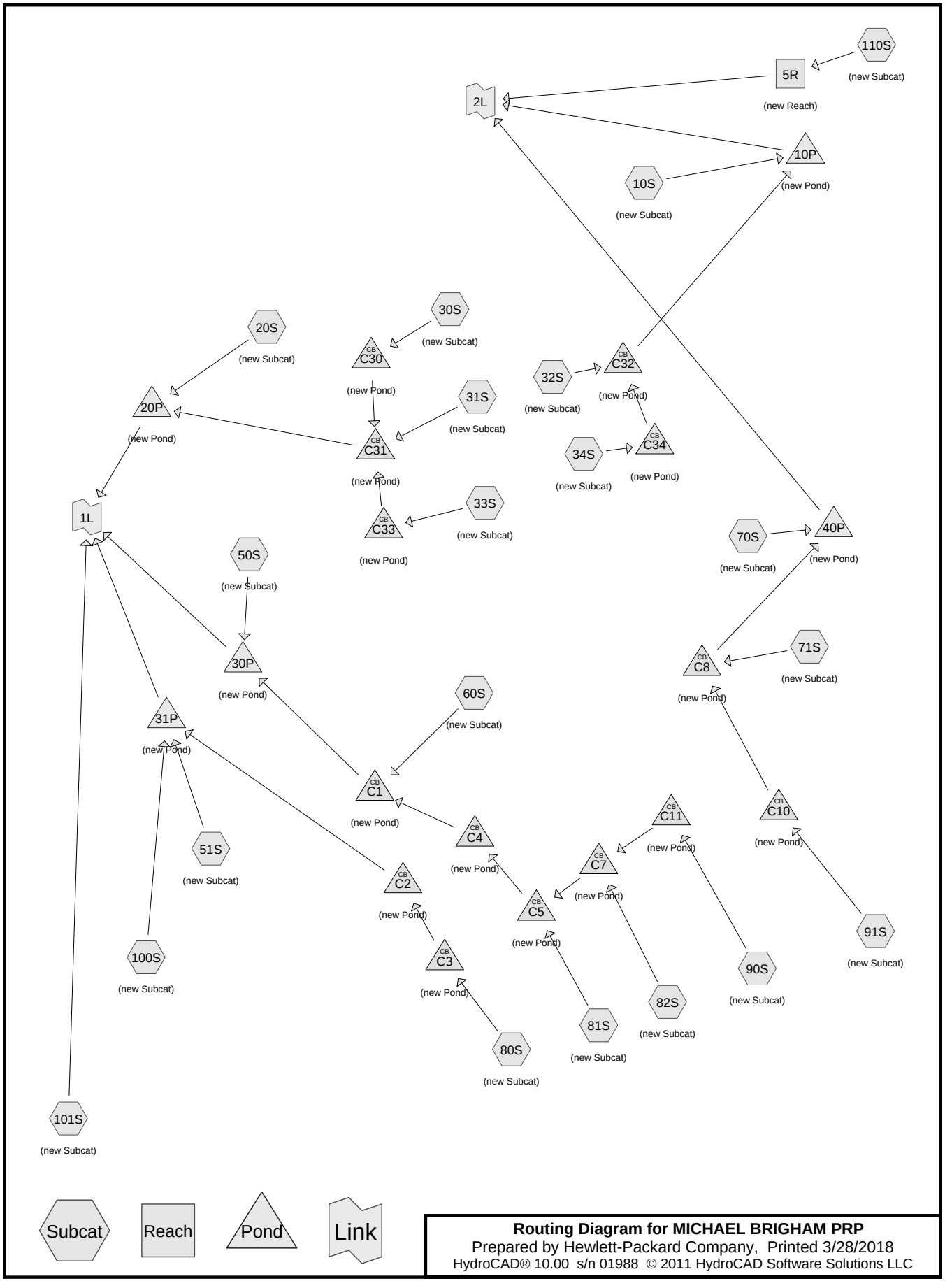
Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2L:

Inflow Area = 8.234 ac, 4.95% Impervious, Inflow Depth > 3.06" for 25 YEAR STORM event
Inflow = 27.67 cfs @ 12.12 hrs, Volume= 2.097 af
Primary = 27.67 cfs @ 12.12 hrs, Volume= 2.097 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

DEVELOPED CONDITION CALCULATIONS



Routing Diagram for MICHAEL BRIGHAM PRP
Prepared by Hewlett-Packard Company, Printed 3/28/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.711	70	Woods, Good, HSG C (10S, 51S, 70S)
3.963	77	Woods, Good, HSG D (20S, 110S)
5.658	91	Newly graded area, HSG C (10S, 20S, 30S, 31S, 32S, 33S, 34S, 50S, 51S, 60S, 70S, 80S, 81S, 82S, 90S, 91S)
1.165	94	Graded area(ROW), HSG D (101S)
0.423	94	Newly graded area, HSG D (100S)
0.287	98	Houses AND Roads (70S)
0.276	98	Houses and Roads (10S)
0.319	98	Lot and Homes (80S)
0.104	98	New Driveway to Existing Parking Lot (100S)
0.159	98	North and South Entrances (101S)
0.306	98	Road (101S)
0.170	98	Roads and Homes (51S)
0.356	98	Roads and Houses (20S)
0.781	98	Roads and Parking Lot (81S, 82S, 90S, 91S)
0.078	98	Roads, Driveway, Parking Lot (71S)
0.108	98	Roads, Driveways (30S)
0.296	98	Roads, Driveways, Houses (31S, 32S, 33S, 34S)
0.167	98	Roads, Homes (50S)
0.618	98	Roads, Houses (60S)
16.943	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
7.369	HSG C	10S, 20S, 30S, 31S, 32S, 33S, 34S, 50S, 51S, 60S, 70S, 80S, 81S, 82S, 90S, 91S
5.551	HSG D	20S, 100S, 101S, 110S
4.023	Other	10S, 20S, 30S, 31S, 32S, 33S, 34S, 50S, 51S, 60S, 70S, 71S, 80S, 81S, 82S, 90S, 91S, 100S, 101S
16.943		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchm Numbers
0.000	0.000	0.000	1.165	0.000	1.165	Graded area(ROW)	
0.000	0.000	0.000	0.000	0.287	0.287	Houses AND Roads	
0.000	0.000	0.000	0.000	0.276	0.276	Houses and Roads	
0.000	0.000	0.000	0.000	0.319	0.319	Lot and Homes	
0.000	0.000	0.000	0.000	0.104	0.104	New Driveway to Existing Parking Lot	
0.000	0.000	5.658	0.423	0.000	6.081	Newly graded area	
0.000	0.000	0.000	0.000	0.159	0.159	North and South Entrances	
0.000	0.000	0.000	0.000	0.306	0.306	Road	
0.000	0.000	0.000	0.000	0.170	0.170	Roads and Homes	
0.000	0.000	0.000	0.000	0.356	0.356	Roads and Houses	
0.000	0.000	0.000	0.000	0.781	0.781	Roads and Parking Lot	
0.000	0.000	0.000	0.000	0.078	0.078	Roads, Driveway, Parking Lot	
0.000	0.000	0.000	0.000	0.108	0.108	Roads, Driveways	
0.000	0.000	0.000	0.000	0.296	0.296	Roads, Driveways, Houses	
0.000	0.000	0.000	0.000	0.167	0.167	Roads, Homes	
0.000	0.000	0.000	0.000	0.618	0.618	Roads, Houses	
0.000	0.000	1.711	3.963	0.000	5.674	Woods, Good	
0.000	**0.000**	**7.369**	**5.551**	**4.023**	**16.943**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: (new Subcat) Runoff Area=93,315 sf 12.88% Impervious Runoff Depth>3.92"
Flow Length=158' Tc=5.2 min CN=82 Runoff=10.32 cfs 0.700 af

Subcatchment20S: (new Subcat) Runoff Area=80,090 sf 19.35% Impervious Runoff Depth>4.77"
Flow Length=176' Tc=3.6 min CN=90 Runoff=11.01 cfs 0.730 af

Subcatchment30S: (new Subcat) Runoff Area=9,321 sf 50.55% Impervious Runoff Depth>5.27"
Flow Length=127' Tc=4.1 min CN=95 Runoff=1.33 cfs 0.094 af

Subcatchment31S: (new Subcat) Runoff Area=6,033 sf 37.33% Impervious Runoff Depth>5.17"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=0.91 cfs 0.060 af

Subcatchment32S: (new Subcat) Runoff Area=8,073 sf 43.42% Impervious Runoff Depth>5.17"
Flow Length=90' Slope=0.0667 '/' Tc=0.8 min CN=94 Runoff=1.23 cfs 0.080 af

Subcatchment33S: (new Subcat) Runoff Area=11,435 sf 39.71% Impervious Runoff Depth>5.17"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=1.73 cfs 0.113 af

Subcatchment34S: (new Subcat) Runoff Area=7,337 sf 35.23% Impervious Runoff Depth>5.08"
Flow Length=99' Slope=0.0400 '/' Tc=1.2 min CN=93 Runoff=1.09 cfs 0.071 af

Subcatchment50S: (new Subcat) Runoff Area=35,156 sf 20.71% Impervious Runoff Depth>4.97"
Flow Length=120' Tc=4.5 min CN=92 Runoff=4.79 cfs 0.334 af

Subcatchment51S: (new Subcat) Runoff Area=28,227 sf 26.25% Impervious Runoff Depth>5.07"
Flow Length=100' Tc=3.7 min CN=93 Runoff=4.02 cfs 0.274 af

Subcatchment60S: (new Subcat) Runoff Area=60,852 sf 44.22% Impervious Runoff Depth>5.17"
Flow Length=110' Slope=0.0200 '/' Tc=6.8 min CN=94 Runoff=7.91 cfs 0.602 af

Subcatchment70S: (new Subcat) Runoff Area=61,080 sf 20.46% Impervious Runoff Depth>3.92"
Flow Length=258' Tc=7.2 min CN=82 Runoff=6.43 cfs 0.458 af

Subcatchment71S: (new Subcat) Runoff Area=3,382 sf 100.00% Impervious Runoff Depth>5.51"
Flow Length=50' Slope=0.0200 '/' Tc=5.8 min CN=98 Runoff=0.46 cfs 0.036 af

Subcatchment80S: (new Subcat) Runoff Area=20,502 sf 67.68% Impervious Runoff Depth>5.36"
Flow Length=70' Tc=4.0 min CN=96 Runoff=2.97 cfs 0.210 af

Subcatchment81S: (new Subcat) Runoff Area=12,509 sf 69.22% Impervious Runoff Depth>5.36"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=1.90 cfs 0.128 af

Subcatchment82S: (new Subcat) Runoff Area=14,536 sf 69.63% Impervious Runoff Depth>5.36"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=2.21 cfs 0.149 af

Subcatchment90S: (new Subcat) Runoff Area=16,228 sf 66.84% Impervious Runoff Depth>5.36"
Flow Length=45' Slope=0.0778 '/' Tc=0.1 min CN=96 Runoff=2.56 cfs 0.166 af

Subcatchment 91S: (new Subcat) Runoff Area=14,991 sf 29.36% Impervious Runoff Depth>5.08"
Flow Length=104' Slope=0.0200 '/' Tc=1.0 min CN=93 Runoff=2.24 cfs 0.146 af

Subcatchment 100S: (new Subcat) Runoff Area=22,953 sf 19.66% Impervious Runoff Depth>5.27"
Flow Length=100' Slope=0.0800 '/' Tc=3.5 min CN=95 Runoff=3.36 cfs 0.231 af

Subcatchment 101S: (new Subcat) Runoff Area=70,984 sf 28.52% Impervious Runoff Depth>5.27"
Flow Length=415' Slope=0.0300 '/' Tc=7.2 min CN=95 Runoff=9.21 cfs 0.715 af

Subcatchment 110S: (new Subcat) Runoff Area=161,031 sf 0.00% Impervious Runoff Depth>3.41"
Flow Length=359' Tc=8.1 min CN=77 Runoff=14.53 cfs 1.052 af

Reach 5R: (new Reach) Avg. Flow Depth=0.24' Max Vel=3.04 fps Inflow=14.53 cfs 1.052 af
n=0.022 L=600.0' S=0.0233 '/' Capacity=1,331.75 cfs Outflow=13.44 cfs 1.046 af

Pond 10P: (new Pond) Peak Elev=55.80' Storage=9,673 cf Inflow=12.11 cfs 0.851 af
Outflow=4.25 cfs 0.851 af

Pond 20P: (new Pond) Peak Elev=44.20' Storage=14,156 cf Inflow=14.65 cfs 0.997 af
Outflow=6.69 cfs 0.863 af

Pond 30P: (new Pond) Peak Elev=45.62' Storage=20,060 cf Inflow=17.43 cfs 1.380 af
Outflow=7.99 cfs 1.194 af

Pond 31P: (new Pond) Peak Elev=50.90' Storage=8,722 cf Inflow=10.34 cfs 0.715 af
Outflow=6.61 cfs 0.617 af

Pond 40P: (new Pond) Peak Elev=60.84' Storage=7,035 cf Inflow=8.18 cfs 0.639 af
Outflow=6.21 cfs 0.547 af

Pond C1: (new Pond) Peak Elev=60.02' Inflow=12.67 cfs 1.046 af
15.0" Round Culvert n=0.010 L=184.0' S=0.0668 '/' Outflow=12.67 cfs 1.046 af

Pond C10: (new Pond) Peak Elev=60.85' Inflow=2.24 cfs 0.146 af
12.0" Round Culvert n=0.010 L=62.0' S=0.0161 '/' Outflow=2.24 cfs 0.146 af

Pond C11: (new Pond) Peak Elev=58.95' Inflow=2.56 cfs 0.166 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0100 '/' Outflow=2.56 cfs 0.166 af

Pond C2: (new Pond) Peak Elev=57.31' Inflow=2.97 cfs 0.210 af
12.0" Round Culvert n=0.010 L=119.0' S=0.0647 '/' Outflow=2.97 cfs 0.210 af

Pond C3: (new Pond) Peak Elev=57.66' Inflow=2.97 cfs 0.210 af
12.0" Round Culvert n=0.010 L=18.7' S=0.0053 '/' Outflow=2.97 cfs 0.210 af

Pond C30: (new Pond) Peak Elev=55.92' Inflow=1.33 cfs 0.094 af
12.0" Round Culvert n=0.010 L=29.0' S=0.0103 '/' Outflow=1.33 cfs 0.094 af

Pond C31: (new Pond) Peak Elev=56.18' Inflow=3.76 cfs 0.267 af
12.0" Round Culvert n=0.010 L=127.0' S=0.0921 '/' Outflow=3.76 cfs 0.267 af

Pond C32: (new Pond) Peak Elev=58.97' Inflow=2.32 cfs 0.151 af
12.0" Round Culvert n=0.010 L=160.0' S=0.0850 '/' Outflow=2.32 cfs 0.151 af

Pond C33: (new Pond) Peak Elev=55.86' Inflow=1.73 cfs 0.113 af
12.0" Round Culvert n=0.010 L=45.0' S=0.0067 '/' Outflow=1.73 cfs 0.113 af

Pond C34: (new Pond) Peak Elev=59.07' Inflow=1.09 cfs 0.071 af
12.0" Round Culvert n=0.010 L=48.0' S=0.0062 '/' Outflow=1.09 cfs 0.071 af

Pond C4: (new Pond) Peak Elev=59.90' Inflow=6.63 cfs 0.444 af
12.0" Round Culvert n=0.010 L=116.0' S=0.0121 '/' Outflow=6.63 cfs 0.444 af

Pond C5: (new Pond) Peak Elev=61.07' Inflow=6.63 cfs 0.444 af
12.0" Round Culvert n=0.010 L=99.0' S=0.0051 '/' Outflow=6.63 cfs 0.444 af

Pond C7: (new Pond) Peak Elev=59.47' Inflow=4.74 cfs 0.315 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0050 '/' Outflow=4.74 cfs 0.315 af

Pond C8: (new Pond) Peak Elev=60.45' Inflow=2.58 cfs 0.181 af
12.0" Round Culvert n=0.010 L=100.0' S=0.0100 '/' Outflow=2.58 cfs 0.181 af

Link 1L: Inflow=29.68 cfs 3.389 af
Primary=29.68 cfs 3.389 af

Link 2L: Inflow=23.56 cfs 2.444 af
Primary=23.56 cfs 2.444 af

Total Runoff Area = 16.943 ac Runoff Volume = 6.350 af Average Runoff Depth = 4.50"
76.25% Pervious = 12.920 ac 23.75% Impervious = 4.023 ac

Summary for Subcatchment 10S: (new Subcat)

Runoff = 10.32 cfs @ 12.08 hrs, Volume= 0.700 af, Depth> 3.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	12,021	98	Houses and Roads
	36,095	91	Newly graded area, HSG C
	45,199	70	Woods, Good, HSG C
	93,315	82	Weighted Average
	81,294		87.12% Pervious Area
	12,021		12.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	75	0.1000	0.30		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.0	83	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.2	158	Total			

Summary for Subcatchment 20S: (new Subcat)

Runoff = 11.01 cfs @ 12.05 hrs, Volume= 0.730 af, Depth> 4.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
	53,014	91	Newly graded area, HSG C
*	15,494	98	Roads and Houses
	11,582	77	Woods, Good, HSG D
	80,090	90	Weighted Average
	64,596		80.65% Pervious Area
	15,494		19.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	60	0.1000	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.1	116	0.0170	13.25	318.09	**Channel Flow,** Area= 24.0 sf Perim= 13.0' r= 1.85' n= 0.022 Earth, clean & straight
3.6	176	Total			

Summary for Subcatchment 30S: (new Subcat)

Runoff = 1.33 cfs @ 12.06 hrs, Volume= 0.094 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
	4,609	91	Newly graded area, HSG C
*	4,712	98	Roads, Driveways
	9,321	95	Weighted Average
	4,609		49.45% Pervious Area
	4,712		50.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.8	77	0.0519	1.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	127	Total			

Summary for Subcatchment 31S: (new Subcat)

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 0.060 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	2,252	98	Roads, Driveways, Houses
	3,781	91	Newly graded area, HSG C
	6,033	94	Weighted Average
	3,781		62.67% Pervious Area
	2,252		37.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	102	0.0588	1.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Summary for Subcatchment 32S: (new Subcat)

Runoff = 1.23 cfs @ 12.01 hrs, Volume= 0.080 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	3,505	98	Roads, Driveways, Houses
	4,568	91	Newly graded area, HSG C
	8,073	94	Weighted Average
	4,568		56.58% Pervious Area
	3,505		43.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	90	0.0667	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Summary for Subcatchment 33S: (new Subcat)

Runoff = 1.73 cfs @ 12.01 hrs, Volume= 0.113 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	4,541	98	Roads, Driveways, Houses
	6,894	91	Newly graded area, HSG C
	11,435	94	Weighted Average
	6,894		60.29% Pervious Area
	4,541		39.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	102	0.0588	1.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Summary for Subcatchment 34S: (new Subcat)

Runoff = 1.09 cfs @ 12.02 hrs, Volume= 0.071 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	2,585	98	Roads, Driveways, Houses
	4,752	91	Newly graded area, HSG C
	7,337	93	Weighted Average
	4,752		64.77% Pervious Area
	2,585		35.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	99	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Summary for Subcatchment 50S: (new Subcat)

Runoff = 4.79 cfs @ 12.06 hrs, Volume= 0.334 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
	27,875	91	Newly graded area, HSG C
*	7,281	98	Roads, Homes
	35,156	92	Weighted Average
	27,875		79.29% Pervious Area
	7,281		20.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	70	0.0850	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.2	50	0.3200	3.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	120	Total			

Summary for Subcatchment 51S: (new Subcat)

Runoff = 4.02 cfs @ 12.05 hrs, Volume= 0.274 af, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
	20,389	91	Newly graded area, HSG C
*	7,409	98	Roads and Homes
	429	70	Woods, Good, HSG C
	28,227	93	Weighted Average
	20,818		73.75% Pervious Area
	7,409		26.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	70	0.1420	0.34		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.2	30	0.1710	2.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.7	100	Total			

Summary for Subcatchment 60S: (new Subcat)

Runoff = 7.91 cfs @ 12.10 hrs, Volume= 0.602 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	26,907	98	Roads, Houses
	33,945	91	Newly graded area, HSG C
	60,852	94	Weighted Average
	33,945		55.78% Pervious Area
	26,907		44.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.0	60	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.8	110	Total			

Summary for Subcatchment 70S: (new Subcat)

Runoff = 6.43 cfs @ 12.10 hrs, Volume= 0.458 af, Depth> 3.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
	19,664	91	Newly graded area, HSG C
*	12,497	98	Houses AND Roads
	28,919	70	Woods, Good, HSG C
	61,080	82	Weighted Average
	48,583		79.54% Pervious Area
	12,497		20.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	60	0.1000	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.3	42	0.0950	2.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	156	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	258	Total			

Summary for Subcatchment 71S: (new Subcat)

Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	3,382	98	Roads, Driveway, Parking Lot
	3,382		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"

Summary for Subcatchment 80S: (new Subcat)

Runoff = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	13,875	98	Lot and Homes
	6,627	91	Newly graded area, HSG C
	20,502	96	Weighted Average
	6,627		32.32% Pervious Area
	13,875		67.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	42	0.0400	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.2	28	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.0	70	Total			

Summary for Subcatchment 81S: (new Subcat)

Runoff = 1.90 cfs @ 12.02 hrs, Volume= 0.128 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	8,659	98	Roads and Parking Lot
	3,850	91	Newly graded area, HSG C
	12,509	96	Weighted Average
	3,850		30.78% Pervious Area
	8,659		69.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.6	96	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	146	Total			

Summary for Subcatchment 82S: (new Subcat)

Runoff = 2.21 cfs @ 12.02 hrs, Volume= 0.149 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	10,122	98	Roads and Parking Lot
	4,414	91	Newly graded area, HSG C
	14,536	96	Weighted Average
	4,414		30.37% Pervious Area
	10,122		69.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.6	96	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	146	Total			

Summary for Subcatchment 90S: (new Subcat)

Runoff = 2.56 cfs @ 12.00 hrs, Volume= 0.166 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	10,847	98	Roads and Parking Lot
	5,381	91	Newly graded area, HSG C
	16,228	96	Weighted Average
	5,381		33.16% Pervious Area
	10,847		66.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	45	0.0778	5.66		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Summary for Subcatchment 91S: (new Subcat)

Runoff = 2.24 cfs @ 12.01 hrs, Volume= 0.146 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	4,401	98	Roads and Parking Lot
	10,590	91	Newly graded area, HSG C
	14,991	93	Weighted Average
	10,590		70.64% Pervious Area
	4,401		29.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.3	54	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.0	104	Total			

Summary for Subcatchment 100S: (new Subcat)

Runoff = 3.36 cfs @ 12.05 hrs, Volume= 0.231 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	4,512	98	New Driveway to Existing Parking Lot
	18,441	94	Newly graded area, HSG D
	22,953	95	Weighted Average
	18,441		80.34% Pervious Area
	4,512		19.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.2	50	0.0800	4.24		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.5	100	Total			

Summary for Subcatchment 101S: (new Subcat)

Runoff = 9.21 cfs @ 12.10 hrs, Volume= 0.715 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	13,336	98	Road
*	6,912	98	North and South Entrances
*	50,736	94	Graded area(ROW), HSG D
	70,984	95	Weighted Average
	50,736		71.48% Pervious Area
	20,248		28.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0300	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
2.3	365	0.0300	2.60		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.2	415	Total			

Summary for Subcatchment 110S: (new Subcat)

Runoff = 14.53 cfs @ 12.12 hrs, Volume= 1.052 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
161,031	77	Woods, Good, HSG D
161,031		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0400	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.7	309	0.0388	2.95		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.1	359	Total			

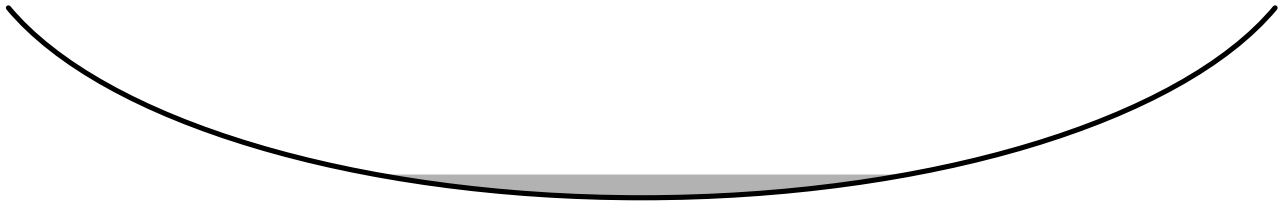
Summary for Reach 5R: (new Reach)

Inflow Area = 3.697 ac, 0.00% Impervious, Inflow Depth > 3.41" for 25 YEAR STORM event
Inflow = 14.53 cfs @ 12.12 hrs, Volume= 1.052 af
Outflow = 13.44 cfs @ 12.21 hrs, Volume= 1.046 af, Atten= 8%, Lag= 5.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.04 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 1.17 fps, Avg. Travel Time= 8.6 min

Peak Storage= 2,671 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,331.75 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 600.0' Slope= 0.0233 '/'
Inlet Invert= 52.00', Outlet Invert= 38.00'



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Summary for Pond 10P: (new Pond)

Inflow Area = 2.496 ac, 16.66% Impervious, Inflow Depth > 4.09" for 25 YEAR STORM event
Inflow = 12.11 cfs @ 12.07 hrs, Volume= 0.851 af
Outflow = 4.25 cfs @ 12.35 hrs, Volume= 0.851 af, Atten= 65%, Lag= 17.2 min
Primary = 4.25 cfs @ 12.35 hrs, Volume= 0.851 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 55.80' @ 12.35 hrs Surf.Area= 5,322 sf Storage= 9,673 cf

Plug-Flow detention time= 26.1 min calculated for 0.848 af (100% of inflow)
Center-of-Mass det. time= 25.7 min (794.5 - 768.8)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	32,129 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
53.50	3,157	0	0
55.00	4,520	5,758	5,758
57.00	6,536	11,056	16,814
59.00	8,779	15,315	32,129

Device	Routing	Invert	Outlet Devices
#1	Primary	51.03'	**12.0" Round Culvert** L= 46.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.03' / 50.00' S= 0.0224 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	51.23'	**6.0" Round Culvert** L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.23' / 51.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	53.50'	**2.40 cfs Exfiltration at all elevations**

#4	Device 1	55.00'	**8.0" Vert. Orifice/Grate X 2.00** C= 0.600
#5	Device 1	58.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.25 cfs @ 12.35 hrs HW=55.80' (Free Discharge)
- **1=Culvert** (Passes 4.25 cfs of 7.81 cfs potential flow)
  - **2=Culvert** (Inlet Controls 1.96 cfs @ 10.00 fps)
    - **3=Exfiltration** (Passes 1.96 cfs of 2.40 cfs potential flow)
  - **4=Orifice/Grate** (Orifice Controls 2.28 cfs @ 3.27 fps)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 20P: (new Pond)

Inflow Area = 2.454 ac, 25.26% Impervious, Inflow Depth > 4.88" for 25 YEAR STORM event
Inflow = 14.65 cfs @ 12.05 hrs, Volume= 0.997 af
Outflow = 6.69 cfs @ 12.20 hrs, Volume= 0.863 af, Atten= 54%, Lag= 8.9 min
Primary = 6.69 cfs @ 12.20 hrs, Volume= 0.863 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 44.20' @ 12.20 hrs Surf.Area= 7,650 sf Storage= 14,156 cf

Plug-Flow detention time= 81.1 min calculated for 0.860 af (86% of inflow)
Center-of-Mass det. time= 40.0 min (790.0 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	41.50'	25,716 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.50	3,014	0	0
43.00	5,404	6,314	6,314
44.00	7,254	6,329	12,643
45.50	10,177	13,073	25,716

Device	Routing	Invert	Outlet Devices
#1	Primary	39.03'	**12.0" Round Culvert** L= 68.2' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.03' / 38.00' S= 0.0151 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	39.23'	**6.0" Round Culvert** L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.23' / 39.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	41.50'	**2.400 in/hr Exfiltration over Surface area**
#4	Device 1	43.00'	**8.0" Vert. Orifice/Grate X 4.00** C= 0.600
#5	Device 1	45.67'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.69 cfs @ 12.20 hrs HW=44.20' (Free Discharge)
└**1=Culvert** (Passes 6.69 cfs of 8.17 cfs potential flow)
  ├**2=Culvert** (Passes 0.42 cfs of 2.05 cfs potential flow)
  │ └**3=Exfiltration** (Exfiltration Controls 0.42 cfs)
  ├**4=Orifice/Grate** (Orifice Controls 6.27 cfs @ 4.49 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 30P: (new Pond)

Inflow Area = 3.197 ac, 45.82% Impervious, Inflow Depth > 5.18" for 25 YEAR STORM event
Inflow = 17.43 cfs @ 12.06 hrs, Volume= 1.380 af
Outflow = 7.99 cfs @ 12.27 hrs, Volume= 1.194 af, Atten= 54%, Lag= 12.5 min
Primary = 7.99 cfs @ 12.27 hrs, Volume= 1.194 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 45.62' @ 12.26 hrs Surf.Area= 8,228 sf Storage= 20,060 cf

Plug-Flow detention time= 81.9 min calculated for 1.194 af (87% of inflow)
Center-of-Mass det. time= 39.8 min (782.7 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	32,387 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	4,718	0	0
44.00	6,330	8,286	8,286
46.00	8,677	15,007	23,293
47.00	9,510	9,094	32,387

Device	Routing	Invert	Outlet Devices
#1	Primary	40.03'	**12.0" Round Culvert** L= 63.5' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.03' / 39.00' S= 0.0162 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	40.23'	**6.0" Round Culvert** L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.23' / 40.13' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	42.50'	**2.400 in/hr Exfiltration over Surface area**
#4	Device 1	44.00'	**8.0" Vert. Orifice/Grate X 4.00** C= 0.600
#5	Device 1	45.67'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.99 cfs @ 12.27 hrs HW=45.61' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.99 cfs @ 10.17 fps)
  ├**2=Culvert** (Passes < 2.00 cfs potential flow)
  │ └**3=Exfiltration** (Passes < 0.46 cfs potential flow)
  ├**4=Orifice/Grate** (Passes < 7.61 cfs potential flow)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 31P: (new Pond)

Inflow Area = 1.646 ac, 35.99% Impervious, Inflow Depth > 5.22" for 25 YEAR STORM event
Inflow = 10.34 cfs @ 12.05 hrs, Volume= 0.715 af
Outflow = 6.61 cfs @ 12.14 hrs, Volume= 0.617 af, Atten= 36%, Lag= 5.3 min
Primary = 6.61 cfs @ 12.14 hrs, Volume= 0.617 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 50.90' @ 12.14 hrs Surf.Area= 4,678 sf Storage= 8,722 cf

Plug-Flow detention time= 79.9 min calculated for 0.615 af (86% of inflow)
Center-of-Mass det. time= 37.9 min (779.3 - 741.4)

Volume	Invert	Avail.Storage	Storage Description
#1	48.50'	14,300 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.50	2,400	0	0
50.00	4,000	4,800	4,800
52.00	5,500	9,500	14,300

Device	Routing	Invert	Outlet Devices
#1	Primary	46.03'	**12.0" Round Culvert** L= 30.5' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.03' / 43.50' S= 0.0830 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	46.23'	**6.0" Round Culvert** L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.23' / 46.13' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	48.50'	**2.400 in/hr Exfiltration over Surface area**
#4	Device 1	50.00'	**8.0" Vert. Orifice/Grate X 5.00** C= 0.600
#5	Device 1	51.67'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.58 cfs @ 12.14 hrs HW=50.90' (Free Discharge)
└**1=Culvert** (Passes 6.58 cfs of 7.90 cfs potential flow)
  ├**2=Culvert** (Passes 0.26 cfs of 1.85 cfs potential flow)
  │ └**3=Exfiltration** (Exfiltration Controls 0.26 cfs)
  ├**4=Orifice/Grate** (Orifice Controls 6.32 cfs @ 3.62 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 40P: (new Pond)

Inflow Area = 1.824 ac, 25.52% Impervious, Inflow Depth > 4.21" for 25 YEAR STORM event
Inflow = 8.18 cfs @ 12.09 hrs, Volume= 0.639 af
Outflow = 6.21 cfs @ 12.18 hrs, Volume= 0.547 af, Atten= 24%, Lag= 5.5 min
Primary = 6.21 cfs @ 12.18 hrs, Volume= 0.547 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 60.84' @ 12.18 hrs Surf.Area= 3,764 sf Storage= 7,035 cf

Plug-Flow detention time= 70.7 min calculated for 0.545 af (85% of inflow)
Center-of-Mass det. time= 28.1 min (794.5 - 766.4)

Volume	Invert	Avail.Storage	Storage Description
#1	58.50'	11,853 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.50	2,295	0	0
60.00	3,182	4,108	4,108
62.00	4,563	7,745	11,853

Device	Routing	Invert	Outlet Devices
#1	Primary	56.03'	**12.0" Round Culvert** L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.03' / 54.00' S= 0.0226 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	56.23'	**6.0" Round Culvert** L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.23' / 56.13' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	58.50'	**2.400 in/hr Exfiltration over Surface area**
#4	Device 1	60.00'	**8.0" Vert. Orifice/Grate X 5.00** C= 0.600
#5	Device 1	61.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.17 cfs @ 12.18 hrs HW=60.84' (Free Discharge)
- **1=Culvert** (Passes 6.17 cfs of 7.32 cfs potential flow)
  - **2=Culvert** (Passes 0.21 cfs of 1.84 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.21 cfs)
  - **4=Orifice/Grate** (Orifice Controls 5.96 cfs @ 3.42 fps)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond C1: (new Pond)

Inflow Area = 2.390 ac, 54.30% Impervious, Inflow Depth > 5.25" for 25 YEAR STORM event
Inflow = 12.67 cfs @ 12.05 hrs, Volume= 1.046 af
Outflow = 12.67 cfs @ 12.05 hrs, Volume= 1.046 af, Atten= 0%, Lag= 0.0 min
Primary = 12.67 cfs @ 12.05 hrs, Volume= 1.046 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 60.02' @ 12.05 hrs
Flood Elev= 60.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.80'	**15.0" Round Culvert** L= 184.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.80' / 42.50' S= 0.0668 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=12.65 cfs @ 12.05 hrs HW=60.01' (Free Discharge)
└**1=Culvert** (Inlet Controls 12.65 cfs @ 10.31 fps)

Summary for Pond C10: (new Pond)

Inflow Area = 0.344 ac, 29.36% Impervious, Inflow Depth > 5.08" for 25 YEAR STORM event
Inflow = 2.24 cfs @ 12.01 hrs, Volume= 0.146 af
Outflow = 2.24 cfs @ 12.01 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 2.24 cfs @ 12.01 hrs, Volume= 0.146 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 60.85' @ 12.01 hrs
Flood Elev= 60.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	60.00'	**12.0" Round Culvert** L= 62.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 60.00' / 59.00' S= 0.0161 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.15 cfs @ 12.01 hrs HW=60.83' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.15 cfs @ 3.10 fps)

Summary for Pond C11: (new Pond)

Inflow Area = 0.373 ac, 66.84% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 2.56 cfs @ 12.00 hrs, Volume= 0.166 af
Outflow = 2.56 cfs @ 12.00 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min
Primary = 2.56 cfs @ 12.00 hrs, Volume= 0.166 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 58.95' @ 12.00 hrs
Flood Elev= 61.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.00'	**12.0" Round Culvert** L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.00' / 57.40' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.55 cfs @ 12.00 hrs HW=58.95' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.55 cfs @ 3.31 fps)

Summary for Pond C2: (new Pond)

Inflow Area = 0.471 ac, 67.68% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af
Outflow = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 57.31' @ 12.06 hrs
Flood Elev= 60.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	56.20'	**12.0" Round Culvert** L= 119.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.20' / 48.50' S= 0.0647 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.90 cfs @ 12.06 hrs HW=57.29' (Free Discharge)
1=Culvert (Inlet Controls 2.90 cfs @ 3.69 fps)

Summary for Pond C3: (new Pond)

Inflow Area = 0.471 ac, 67.68% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af
Outflow = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.06 hrs, Volume= 0.210 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 57.66' @ 12.06 hrs
Flood Elev= 62.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	56.40'	**12.0" Round 0.0070** L= 18.7' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.40' / 56.30' S= 0.0053 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.91 cfs @ 12.06 hrs HW=57.63' (Free Discharge)
1=0.0070 (Barrel Controls 2.91 cfs @ 3.84 fps)

Summary for Pond C30: (new Pond)

Inflow Area = 0.214 ac, 50.55% Impervious, Inflow Depth > 5.27" for 25 YEAR STORM event
Inflow = 1.33 cfs @ 12.06 hrs, Volume= 0.094 af
Outflow = 1.33 cfs @ 12.06 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.06 hrs, Volume= 0.094 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 55.92' @ 12.06 hrs
Flood Elev= 56.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	55.30'	**12.0" Round Culvert** L= 29.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.30' / 55.00' S= 0.0103 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.30 cfs @ 12.06 hrs HW=55.91' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.30 cfs @ 3.73 fps)

Summary for Pond C31: (new Pond)

Inflow Area = 0.615 ac, 42.95% Impervious, Inflow Depth > 5.21" for 25 YEAR STORM event
Inflow = 3.76 cfs @ 12.03 hrs, Volume= 0.267 af
Outflow = 3.76 cfs @ 12.03 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min
Primary = 3.76 cfs @ 12.03 hrs, Volume= 0.267 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 56.18' @ 12.03 hrs
Flood Elev= 56.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.70'	**12.0" Round Culvert** L= 127.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.70' / 43.00' S= 0.0921 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.63 cfs @ 12.03 hrs HW=56.12' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.63 cfs @ 4.62 fps)

Summary for Pond C32: (new Pond)

Inflow Area = 0.354 ac, 39.52% Impervious, Inflow Depth > 5.13" for 25 YEAR STORM event
Inflow = 2.32 cfs @ 12.01 hrs, Volume= 0.151 af
Outflow = 2.32 cfs @ 12.01 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min
Primary = 2.32 cfs @ 12.01 hrs, Volume= 0.151 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 58.97' @ 12.01 hrs
Flood Elev= 61.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.10'	**12.0" Round Culvert** L= 160.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.10' / 44.50' S= 0.0850 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.22 cfs @ 12.01 hrs HW=58.95' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.22 cfs @ 3.13 fps)

Summary for Pond C33: (new Pond)

Inflow Area = 0.263 ac, 39.71% Impervious, Inflow Depth > 5.17" for 25 YEAR STORM event
Inflow = 1.73 cfs @ 12.01 hrs, Volume= 0.113 af
Outflow = 1.73 cfs @ 12.01 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
Primary = 1.73 cfs @ 12.01 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 55.86' @ 12.01 hrs
Flood Elev= 57.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	55.10'	**12.0" Round Culvert** L= 45.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.10' / 54.80' S= 0.0067 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.66 cfs @ 12.01 hrs HW=55.84' (Free Discharge)
1=Culvert (Barrel Controls 1.66 cfs @ 3.71 fps)

Summary for Pond C34: (new Pond)

Inflow Area = 0.168 ac, 35.23% Impervious, Inflow Depth > 5.08" for 25 YEAR STORM event
Inflow = 1.09 cfs @ 12.02 hrs, Volume= 0.071 af
Outflow = 1.09 cfs @ 12.02 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.02 hrs, Volume= 0.071 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 59.07' @ 12.02 hrs
Flood Elev= 61.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.50'	**12.0" Round Culvert** L= 48.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.50' / 58.20' S= 0.0062 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.02 hrs HW=59.06' (Free Discharge)
1=Culvert (Barrel Controls 1.04 cfs @ 3.33 fps)

Summary for Pond C4: (new Pond)

Inflow Area = 0.993 ac, 68.47% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af
Outflow = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min
Primary = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 59.90' @ 12.01 hrs
Flood Elev= 62.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	56.30'	**12.0" Round Culvert** L= 116.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.30' / 54.90' S= 0.0121 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.43 cfs @ 12.01 hrs HW=59.71' (Free Discharge)
└**1=Culvert** (Barrel Controls 6.43 cfs @ 8.19 fps)

Summary for Pond C5: (new Pond)

Inflow Area = 0.993 ac, 68.47% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af
Outflow = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min
Primary = 6.63 cfs @ 12.01 hrs, Volume= 0.444 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 61.07' @ 12.01 hrs
Flood Elev= 62.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	56.90'	**12.0" Round Culvert** L= 99.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.90' / 56.40' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.40 cfs @ 12.01 hrs HW=60.84' (Free Discharge)
└**1=Culvert** (Barrel Controls 6.40 cfs @ 8.15 fps)

Summary for Pond C7: (new Pond)

Inflow Area = 0.706 ac, 68.16% Impervious, Inflow Depth > 5.36" for 25 YEAR STORM event
Inflow = 4.74 cfs @ 12.01 hrs, Volume= 0.315 af
Outflow = 4.74 cfs @ 12.01 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min
Primary = 4.74 cfs @ 12.01 hrs, Volume= 0.315 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 59.47' @ 12.01 hrs
Flood Elev= 61.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	57.30'	**12.0" Round Culvert** L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 57.30' / 57.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.61 cfs @ 12.01 hrs HW=59.40' (Free Discharge)
└**1=Culvert** (Barrel Controls 4.61 cfs @ 5.87 fps)

Summary for Pond C8: (new Pond)

Inflow Area = 0.422 ac, 42.36% Impervious, Inflow Depth > 5.16" for 25 YEAR STORM event
Inflow = 2.58 cfs @ 12.02 hrs, Volume= 0.181 af
Outflow = 2.58 cfs @ 12.02 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.02 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 60.45' @ 12.02 hrs
Flood Elev= 62.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.50'	**12.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.50' / 58.50' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.48 cfs @ 12.02 hrs HW=60.42' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.48 cfs @ 3.27 fps)

Summary for Link 1L:

Inflow Area = 8.926 ac, 35.20% Impervious, Inflow Depth > 4.56" for 25 YEAR STORM event
Inflow = 29.68 cfs @ 12.12 hrs, Volume= 3.389 af
Primary = 29.68 cfs @ 12.12 hrs, Volume= 3.389 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2L:

Inflow Area = 8.017 ac, 10.99% Impervious, Inflow Depth > 3.66" for 25 YEAR STORM event
Inflow = 23.56 cfs @ 12.21 hrs, Volume= 2.444 af
Primary = 23.56 cfs @ 12.21 hrs, Volume= 2.444 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: (new Subcat) Runoff Area=93,315 sf 12.88% Impervious Runoff Depth>1.50"
Flow Length=158' Tc=5.2 min CN=82 Runoff=4.05 cfs 0.268 af

Subcatchment20S: (new Subcat) Runoff Area=80,090 sf 19.35% Impervious Runoff Depth>2.13"
Flow Length=176' Tc=3.6 min CN=90 Runoff=5.13 cfs 0.326 af

Subcatchment30S: (new Subcat) Runoff Area=9,321 sf 50.55% Impervious Runoff Depth>2.59"
Flow Length=127' Tc=4.1 min CN=95 Runoff=0.68 cfs 0.046 af

Subcatchment31S: (new Subcat) Runoff Area=6,033 sf 37.33% Impervious Runoff Depth>2.50"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=0.46 cfs 0.029 af

Subcatchment32S: (new Subcat) Runoff Area=8,073 sf 43.42% Impervious Runoff Depth>2.50"
Flow Length=90' Slope=0.0667 '/' Tc=0.8 min CN=94 Runoff=0.62 cfs 0.039 af

Subcatchment33S: (new Subcat) Runoff Area=11,435 sf 39.71% Impervious Runoff Depth>2.50"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=0.87 cfs 0.055 af

Subcatchment34S: (new Subcat) Runoff Area=7,337 sf 35.23% Impervious Runoff Depth>2.40"
Flow Length=99' Slope=0.0400 '/' Tc=1.2 min CN=93 Runoff=0.54 cfs 0.034 af

Subcatchment50S: (new Subcat) Runoff Area=35,156 sf 20.71% Impervious Runoff Depth>2.31"
Flow Length=120' Tc=4.5 min CN=92 Runoff=2.32 cfs 0.155 af

Subcatchment51S: (new Subcat) Runoff Area=28,227 sf 26.25% Impervious Runoff Depth>2.40"
Flow Length=100' Tc=3.7 min CN=93 Runoff=1.98 cfs 0.130 af

Subcatchment60S: (new Subcat) Runoff Area=60,852 sf 44.22% Impervious Runoff Depth>2.50"
Flow Length=110' Slope=0.0200 '/' Tc=6.8 min CN=94 Runoff=3.96 cfs 0.291 af

Subcatchment70S: (new Subcat) Runoff Area=61,080 sf 20.46% Impervious Runoff Depth>1.50"
Flow Length=258' Tc=7.2 min CN=82 Runoff=2.51 cfs 0.175 af

Subcatchment71S: (new Subcat) Runoff Area=3,382 sf 100.00% Impervious Runoff Depth>2.87"
Flow Length=50' Slope=0.0200 '/' Tc=5.8 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment80S: (new Subcat) Runoff Area=20,502 sf 67.68% Impervious Runoff Depth>2.69"
Flow Length=70' Tc=4.0 min CN=96 Runoff=1.53 cfs 0.105 af

Subcatchment81S: (new Subcat) Runoff Area=12,509 sf 69.22% Impervious Runoff Depth>2.69"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=0.98 cfs 0.064 af

Subcatchment82S: (new Subcat) Runoff Area=14,536 sf 69.63% Impervious Runoff Depth>2.69"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=1.14 cfs 0.075 af

Subcatchment90S: (new Subcat) Runoff Area=16,228 sf 66.84% Impervious Runoff Depth>2.69"
Flow Length=45' Slope=0.0778 '/' Tc=0.1 min CN=96 Runoff=1.32 cfs 0.083 af

Subcatchment 91S: (new Subcat) Runoff Area=14,991 sf 29.36% Impervious Runoff Depth>2.40"
Flow Length=104' Slope=0.0200 '/' Tc=1.0 min CN=93 Runoff=1.10 cfs 0.069 af

Subcatchment 100S: (new Subcat) Runoff Area=22,953 sf 19.66% Impervious Runoff Depth>2.59"
Flow Length=100' Slope=0.0800 '/' Tc=3.5 min CN=95 Runoff=1.71 cfs 0.114 af

Subcatchment 101S: (new Subcat) Runoff Area=70,984 sf 28.52% Impervious Runoff Depth>2.59"
Flow Length=415' Slope=0.0300 '/' Tc=7.2 min CN=95 Runoff=4.69 cfs 0.352 af

Subcatchment 110S: (new Subcat) Runoff Area=161,031 sf 0.00% Impervious Runoff Depth>1.18"
Flow Length=359' Tc=8.1 min CN=77 Runoff=4.97 cfs 0.363 af

Reach 5R: (new Reach) Avg. Flow Depth=0.14' Max Vel=2.15 fps Inflow=4.97 cfs 0.363 af
n=0.022 L=600.0' S=0.0233 '/' Capacity=1,331.75 cfs Outflow=4.34 cfs 0.360 af

Pond 10P: (new Pond) Peak Elev=54.32' Storage=2,902 cf Inflow=4.91 cfs 0.341 af
Outflow=1.59 cfs 0.340 af

Pond 20P: (new Pond) Peak Elev=43.35' Storage=8,317 cf Inflow=6.97 cfs 0.456 af
Outflow=1.83 cfs 0.360 af

Pond 30P: (new Pond) Peak Elev=44.50' Storage=11,582 cf Inflow=8.72 cfs 0.668 af
Outflow=3.07 cfs 0.526 af

Pond 31P: (new Pond) Peak Elev=50.30' Storage=6,040 cf Inflow=5.22 cfs 0.349 af
Outflow=1.67 cfs 0.278 af

Pond 40P: (new Pond) Peak Elev=60.21' Storage=4,803 cf Inflow=3.39 cfs 0.263 af
Outflow=0.94 cfs 0.195 af

Pond C1: (new Pond) Peak Elev=56.61' Inflow=6.42 cfs 0.513 af
15.0" Round Culvert n=0.010 L=184.0' S=0.0668 '/' Outflow=6.42 cfs 0.513 af

Pond C10: (new Pond) Peak Elev=60.55' Inflow=1.10 cfs 0.069 af
12.0" Round Culvert n=0.010 L=62.0' S=0.0161 '/' Outflow=1.10 cfs 0.069 af

Pond C11: (new Pond) Peak Elev=58.61' Inflow=1.32 cfs 0.083 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0100 '/' Outflow=1.32 cfs 0.083 af

Pond C2: (new Pond) Peak Elev=56.86' Inflow=1.53 cfs 0.105 af
12.0" Round Culvert n=0.010 L=119.0' S=0.0647 '/' Outflow=1.53 cfs 0.105 af

Pond C3: (new Pond) Peak Elev=57.18' Inflow=1.53 cfs 0.105 af
12.0" Round Culvert n=0.010 L=18.7' S=0.0053 '/' Outflow=1.53 cfs 0.105 af

Pond C30: (new Pond) Peak Elev=55.72' Inflow=0.68 cfs 0.046 af
12.0" Round Culvert n=0.010 L=29.0' S=0.0103 '/' Outflow=0.68 cfs 0.046 af

Pond C31: (new Pond) Peak Elev=55.46' Inflow=1.90 cfs 0.130 af
12.0" Round Culvert n=0.010 L=127.0' S=0.0921 '/' Outflow=1.90 cfs 0.130 af

Pond C32: (new Pond) Peak Elev=58.66' Inflow=1.15 cfs 0.072 af
12.0" Round Culvert n=0.010 L=160.0' S=0.0850 '/' Outflow=1.15 cfs 0.072 af

Pond C33: (new Pond) Peak Elev=55.60' Inflow=0.87 cfs 0.055 af
12.0" Round Culvert n=0.010 L=45.0' S=0.0067 '/' Outflow=0.87 cfs 0.055 af

Pond C34: (new Pond) Peak Elev=58.88' Inflow=0.54 cfs 0.034 af
12.0" Round Culvert n=0.010 L=48.0' S=0.0062 '/' Outflow=0.54 cfs 0.034 af

Pond C4: (new Pond) Peak Elev=57.61' Inflow=3.42 cfs 0.223 af
12.0" Round Culvert n=0.010 L=116.0' S=0.0121 '/' Outflow=3.42 cfs 0.223 af

Pond C5: (new Pond) Peak Elev=58.37' Inflow=3.42 cfs 0.223 af
12.0" Round Culvert n=0.010 L=99.0' S=0.0051 '/' Outflow=3.42 cfs 0.223 af

Pond C7: (new Pond) Peak Elev=58.30' Inflow=2.45 cfs 0.158 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0050 '/' Outflow=2.45 cfs 0.158 af

Pond C8: (new Pond) Peak Elev=60.10' Inflow=1.29 cfs 0.087 af
12.0" Round Culvert n=0.010 L=100.0' S=0.0100 '/' Outflow=1.29 cfs 0.087 af

Link 1L: Inflow=8.45 cfs 1.516 af
Primary=8.45 cfs 1.516 af

Link 2L: Inflow=6.13 cfs 0.896 af
Primary=6.13 cfs 0.896 af

Total Runoff Area = 16.943 ac Runoff Volume = 2.792 af Average Runoff Depth = 1.98"
76.25% Pervious = 12.920 ac 23.75% Impervious = 4.023 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: (new Subcat) Runoff Area=93,315 sf 12.88% Impervious Runoff Depth>2.80"
Flow Length=158' Tc=5.2 min CN=82 Runoff=7.46 cfs 0.500 af

Subcatchment20S: (new Subcat) Runoff Area=80,090 sf 19.35% Impervious Runoff Depth>3.57"
Flow Length=176' Tc=3.6 min CN=90 Runoff=8.39 cfs 0.547 af

Subcatchment30S: (new Subcat) Runoff Area=9,321 sf 50.55% Impervious Runoff Depth>4.07"
Flow Length=127' Tc=4.1 min CN=95 Runoff=1.04 cfs 0.073 af

Subcatchment31S: (new Subcat) Runoff Area=6,033 sf 37.33% Impervious Runoff Depth>3.97"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=0.71 cfs 0.046 af

Subcatchment32S: (new Subcat) Runoff Area=8,073 sf 43.42% Impervious Runoff Depth>3.97"
Flow Length=90' Slope=0.0667 '/' Tc=0.8 min CN=94 Runoff=0.96 cfs 0.061 af

Subcatchment33S: (new Subcat) Runoff Area=11,435 sf 39.71% Impervious Runoff Depth>3.97"
Flow Length=102' Slope=0.0588 '/' Tc=1.0 min CN=94 Runoff=1.34 cfs 0.087 af

Subcatchment34S: (new Subcat) Runoff Area=7,337 sf 35.23% Impervious Runoff Depth>3.88"
Flow Length=99' Slope=0.0400 '/' Tc=1.2 min CN=93 Runoff=0.84 cfs 0.054 af

Subcatchment50S: (new Subcat) Runoff Area=35,156 sf 20.71% Impervious Runoff Depth>3.77"
Flow Length=120' Tc=4.5 min CN=92 Runoff=3.69 cfs 0.254 af

Subcatchment51S: (new Subcat) Runoff Area=28,227 sf 26.25% Impervious Runoff Depth>3.87"
Flow Length=100' Tc=3.7 min CN=93 Runoff=3.11 cfs 0.209 af

Subcatchment60S: (new Subcat) Runoff Area=60,852 sf 44.22% Impervious Runoff Depth>3.97"
Flow Length=110' Slope=0.0200 '/' Tc=6.8 min CN=94 Runoff=6.15 cfs 0.462 af

Subcatchment70S: (new Subcat) Runoff Area=61,080 sf 20.46% Impervious Runoff Depth>2.80"
Flow Length=258' Tc=7.2 min CN=82 Runoff=4.65 cfs 0.327 af

Subcatchment71S: (new Subcat) Runoff Area=3,382 sf 100.00% Impervious Runoff Depth>4.33"
Flow Length=50' Slope=0.0200 '/' Tc=5.8 min CN=98 Runoff=0.36 cfs 0.028 af

Subcatchment80S: (new Subcat) Runoff Area=20,502 sf 67.68% Impervious Runoff Depth>4.16"
Flow Length=70' Tc=4.0 min CN=96 Runoff=2.33 cfs 0.163 af

Subcatchment81S: (new Subcat) Runoff Area=12,509 sf 69.22% Impervious Runoff Depth>4.16"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=1.49 cfs 0.100 af

Subcatchment82S: (new Subcat) Runoff Area=14,536 sf 69.63% Impervious Runoff Depth>4.16"
Flow Length=146' Slope=0.0200 '/' Tc=1.3 min CN=96 Runoff=1.73 cfs 0.116 af

Subcatchment90S: (new Subcat) Runoff Area=16,228 sf 66.84% Impervious Runoff Depth>4.16"
Flow Length=45' Slope=0.0778 '/' Tc=0.1 min CN=96 Runoff=2.01 cfs 0.129 af

Subcatchment 91S: (new Subcat) Runoff Area=14,991 sf 29.36% Impervious Runoff Depth>3.88"
Flow Length=104' Slope=0.0200 '/' Tc=1.0 min CN=93 Runoff=1.74 cfs 0.111 af

Subcatchment 100S: (new Subcat) Runoff Area=22,953 sf 19.66% Impervious Runoff Depth>4.07"
Flow Length=100' Slope=0.0800 '/' Tc=3.5 min CN=95 Runoff=2.62 cfs 0.179 af

Subcatchment 101S: (new Subcat) Runoff Area=70,984 sf 28.52% Impervious Runoff Depth>4.07"
Flow Length=415' Slope=0.0300 '/' Tc=7.2 min CN=95 Runoff=7.19 cfs 0.552 af

Subcatchment 110S: (new Subcat) Runoff Area=161,031 sf 0.00% Impervious Runoff Depth>2.36"
Flow Length=359' Tc=8.1 min CN=77 Runoff=10.09 cfs 0.727 af

Reach 5R: (new Reach) Avg. Flow Depth=0.20' Max Vel=2.71 fps Inflow=10.09 cfs 0.727 af
n=0.022 L=600.0' S=0.0233 '/' Capacity=1,331.75 cfs Outflow=9.05 cfs 0.723 af

Pond 10P: (new Pond) Peak Elev=55.32' Storage=7,268 cf Inflow=8.84 cfs 0.616 af
Outflow=2.50 cfs 0.615 af

Pond 20P: (new Pond) Peak Elev=43.82' Storage=11,383 cf Inflow=11.22 cfs 0.753 af
Outflow=5.09 cfs 0.632 af

Pond 30P: (new Pond) Peak Elev=45.13' Storage=16,161 cf Inflow=13.55 cfs 1.061 af
Outflow=6.41 cfs 0.890 af

Pond 31P: (new Pond) Peak Elev=50.66' Storage=7,605 cf Inflow=8.06 cfs 0.551 af
Outflow=5.07 cfs 0.463 af

Pond 40P: (new Pond) Peak Elev=60.57' Storage=6,021 cf Inflow=6.00 cfs 0.466 af
Outflow=4.25 cfs 0.381 af

Pond C1: (new Pond) Peak Elev=58.22' Inflow=9.89 cfs 0.807 af
15.0" Round Culvert n=0.010 L=184.0' S=0.0668 '/' Outflow=9.89 cfs 0.807 af

Pond C10: (new Pond) Peak Elev=60.72' Inflow=1.74 cfs 0.111 af
12.0" Round Culvert n=0.010 L=62.0' S=0.0161 '/' Outflow=1.74 cfs 0.111 af

Pond C11: (new Pond) Peak Elev=58.79' Inflow=2.01 cfs 0.129 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0100 '/' Outflow=2.01 cfs 0.129 af

Pond C2: (new Pond) Peak Elev=57.08' Inflow=2.33 cfs 0.163 af
12.0" Round Culvert n=0.010 L=119.0' S=0.0647 '/' Outflow=2.33 cfs 0.163 af

Pond C3: (new Pond) Peak Elev=57.42' Inflow=2.33 cfs 0.163 af
12.0" Round Culvert n=0.010 L=18.7' S=0.0053 '/' Outflow=2.33 cfs 0.163 af

Pond C30: (new Pond) Peak Elev=55.83' Inflow=1.04 cfs 0.073 af
12.0" Round Culvert n=0.010 L=29.0' S=0.0103 '/' Outflow=1.04 cfs 0.073 af

Pond C31: (new Pond) Peak Elev=55.79' Inflow=2.93 cfs 0.205 af
12.0" Round Culvert n=0.010 L=127.0' S=0.0921 '/' Outflow=2.93 cfs 0.205 af

Pond C32: (new Pond) Peak Elev=58.83' Inflow=1.80 cfs 0.116 af
12.0" Round Culvert n=0.010 L=160.0' S=0.0850 '/' Outflow=1.80 cfs 0.116 af

Pond C33: (new Pond) Peak Elev=55.75' Inflow=1.34 cfs 0.087 af
12.0" Round Culvert n=0.010 L=45.0' S=0.0067 '/' Outflow=1.34 cfs 0.087 af

Pond C34: (new Pond) Peak Elev=58.99' Inflow=0.84 cfs 0.054 af
12.0" Round Culvert n=0.010 L=48.0' S=0.0062 '/' Outflow=0.84 cfs 0.054 af

Pond C4: (new Pond) Peak Elev=58.68' Inflow=5.20 cfs 0.345 af
12.0" Round Culvert n=0.010 L=116.0' S=0.0121 '/' Outflow=5.20 cfs 0.345 af

Pond C5: (new Pond) Peak Elev=59.66' Inflow=5.20 cfs 0.345 af
12.0" Round Culvert n=0.010 L=99.0' S=0.0051 '/' Outflow=5.20 cfs 0.345 af

Pond C7: (new Pond) Peak Elev=58.91' Inflow=3.72 cfs 0.245 af
12.0" Round Culvert n=0.010 L=60.0' S=0.0050 '/' Outflow=3.72 cfs 0.245 af

Pond C8: (new Pond) Peak Elev=60.29' Inflow=2.01 cfs 0.139 af
12.0" Round Culvert n=0.010 L=100.0' S=0.0100 '/' Outflow=2.01 cfs 0.139 af

Link 1L: Inflow=22.61 cfs 2.537 af
Primary=22.61 cfs 2.537 af

Link 2L: Inflow=15.27 cfs 1.719 af
Primary=15.27 cfs 1.719 af

Total Runoff Area = 16.943 ac Runoff Volume = 4.726 af Average Runoff Depth = 3.35"
76.25% Pervious = 12.920 ac 23.75% Impervious = 4.023 ac

BMP CALCULATIONS

TABLE 1 - QUANTITY CALCULATIONS STORM EVENT

		2	10	25
EXISTING	**AP 1**	11.63	23.54	33.88
	AP 2	7.15	16.04	27.67
DEVELOPED	**AP 1**	8.45	22.61	29.68
	AP 2	6.13	15.27	23.56
CHANGE	**AP 1**	-3.18	-0.93	-4.20
	AP 2	-1.02	-0.77	-4.11

TREATMENT CALCULATIONS

New Impervious Area to be Treated @95% 161,914 sf 3.72 Acres
New Developed Area to be Treated @80% 426,506 sf 9.79 Acres

AMENDED DEVELOPED CONDITIONS:

AREA	IMP. (ft^2)					LA. (ft^2)					DEV. (ft^2)				
	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext. (HCAD)	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated
10S		12,021		12,021	0		36,095		36,095	0	12,021	48,116	0	48,116	0
20S		15,494		15,494	0		53,014		53,014	0	15,494	68,508	0	68,508	0
30S		4,712		4,712	0		4,612		4,612	0	4,712	9,324	0	9,324	0
31S		2,252		2,252	0		3,781		3,781	0		6,033	0	6,033	0
32S		3,505		3,505	0		4,568		4,568	0		8,073	0	8,073	0
33S		4,541		4,541	0		6,894		6,894	0		11,435	0	11,435	0
34S		2,585		2,585	0		4,752		4,752	0		7,337	0	7,337	0
50S		7,281		7,281	0		27,875		27,875	0		35,156	0	35,156	0
51S		7,409		7,409	0		20,389		20,389	0		27,798		27,798	0
60S		26907		26907	0		33945		33945	0		60852		60852	0
70S		12497		12497	0		19664		19664	0		32161		32161	0
71S		3382		3382	0		0		0	0		3382		3382	0
80S		13875		13875	0		6627		6627	0		20502		20502	0
81S		8659		8659	0		3850		3850	0		12509		12509	0
82S		10122		10122	0		4114		4114	0		14236		14236	0
90S		10847		10847	0		5381		5381	0		16228		16228	0
91S		4401		4401	0		10590		10590	0		14991		14991	0
100S		4512		4512	0		18441		18441	0		22953		22953	0
101S	20248	6912		0	6912	50736	0		0	0		6912		0	6912
TOTAL	20,248	161,914	0	155,002	6,912	50,736	264,592	0	264,592	0	70,984	426,506	0	**419,594**	6,912

NEW

AREA	IMP. (ft^2)	DEV (ft^2)
Total Area	**155002**	**419594**
Total Acres	**3.56**	**9.63**
% Treated=	**95.7%**	**98.4%**

95% IMP. AND 80% DEV IS REQUIRED

*BIORETENTION - MAX 1 ACRE SUBCATCHMENT, BOP<2000 S.F.

Michael Brigham Landmark - BMP Calculations

POND SIZING CALCULATIONS

AREA	IMP. (ft^2)	LA. (ft^2)	RA. (ft^2)	BMP	CPV (ft^3)	P. POOL (ft^3)	CHECK
Pond 10				**Soil Filter**			
10S	12,021	36,095			2,205	N/A	
32S	3,505	4,568			444		
34S	2,585	4,752			374		
Total	18,111	45,415			3,023	N/A	
				5% Impervious + 2% Landscaped Area =	1,814		
				5% Impervious + 2% Remaining Area =	1,814		
				Provided CPV =	5,758		OK
				Provided Area =	3157		OK
Pond 20				**Soil Filter**			
20S	15,494	53,014			3,058	N/A	
30S	4,712	4,612			546		
31S	2,252	3,781			314		
33S	4,541	6,894			608		
Total	26,999	68,301	0		4,527	N/A	0.00
				5% Impervious + 2% Landscaped Area =	2,716		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	6,314		OK
				Provided Area =	3,014		OK
Pond 30				**Soil Filter**			
50S	7,281	27,875			1,536		
60S	26,907	33,945			3,374		
81S	8,659	3,850			850		
82S	10,122	4,114			981		
90S	10,847	5,381			1,083		
Total	63,816	75,165			7,824	N/A	
				5% Impervious + 2% Landscaped Area =	4,694		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	8,286		OK
				Provided Area =	4,718		OK
Pond 31				**Soil Filter**			
51S	7,409	20,389			1,297		
80S	13,875	6,627			1,377		
100S	4,512	18,441			991		
Total	25,796	45,457			3,665	N/A	0.00
				5% Impervious + 2% Landscaped Area =	2,199		
				5% Impervious + 2% Remaining Area =	2,199		
				Provided CPV =	4,800		OK
				Provided Area =	2,434		OK
Pond 40				**Soil Filter**			
70S	12,497	19,664			1,697	N/A	
71S	3,382	0			282		
91S	4,401	10,590			720		
Total	20,280	30,254	0		2,698	N/A	0.00
				5% Impervious + 2% Landscaped Area =	1,619		
				5% Impervious + 2% Remaining Area =	1,619		
				Provided CPV =	4,108		OK
				Provided Area =	2,295		OK

OPERATION AND MAINTENANCE PROGRAM

ATTAR
ENGINEERING, INC
CIVIL • STRUCTURAL • MARINE

THE HOMESTEAD - MIXED USE DEVELOPMENT
459 U.S. ROUTE 1
KITTERY, MAINE

OPERATION AND MAINTENANCE PROGRAM STORMWATER MANAGEMENT BMP's

This project contains specific Best Management Practices (BMP's) for the conveyance, storage, and treatment of stormwater and the prevention of erosion. These BMP's consist of swales, underdrained soil filter ponds, catchbasins and culverts. All components should be inspected quarterly, and after every significant rain event of 1" in any 24-hour period. Additional inspection intervals are specified for certain BMP's, specifically, underdrained soil filters.

The party responsible for implementing this Operation and Maintenance Program (O & M Program) shall be the property owner or condominium association.

Swales
All swales should be inspected for accumulation of debris, which could adversely affect the function of this BMP. These areas should also be maintained to have gradual slopes, which prevent channeling of stormwater and erosion of the bottom and sides of the swales.

Catch Basins
All catch basin grates, sumps, and inlets/outlets should be inspected for accumulation of debris, which could adversely affect the function of this BMP. Additionally, the basin inverts shall be inspected for clogging and material soundness. Sumps shall always be clear to a depth of 1' below the outlet invert. Inlet structures shall be inspected and cleaned of debris at least twice annually, once in the spring following snow melt and once in the autumn after leaf fall.

Culverts
Culvert inlets and outlets should be inspected for debris, which could clog the BMP. Additionally, the placement of rip-rap should be inspected to ensure that all areas remain smooth and no areas exhibit erosion in the form of rills or gullies.

Snow Removal
Snow shall be stockpiled only in the approved snow storage areas. Plowing of snow into wetland areas or detention ponds shall be avoided. Additionally, a mostly sand mix (reduced salt) shall be applied during winter months to prevent excessive salt from leaching into wetland areas. Excess sand shall be removed from the storage areas, all paved surfaces and adjacent areas each spring.

Underdrained Soil Filters
The underdrained soil filter area is a very effective BMP, however, long term maintenance is essential to its operation. The soil filter should be inspected after every major storm event during the first year to ensure proper function and at least twice-annually, thereafter. The inspection should ensure that the filter drains within 24 - 48

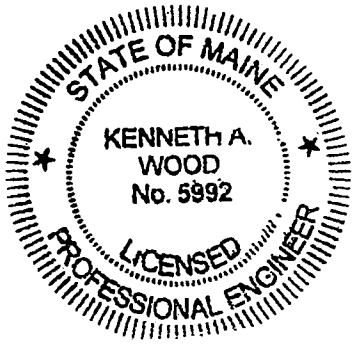
hours. The top several inches of the filter should be replaced with fresh filter material, when water ponds for longer than 72 hours. Debris and sediment that builds up should be removed from the pre-treatment structure at least annually. Outlet structures shall be inspected and cleaned of debris at least twice annually, once in the spring following snow melt and once in the autumn after leaf fall. The height of grass shall be maintained at a maximum of 12"; mowing shall be limited to no more than two times during the growing season.

Seeding, Fertilizing and Mulching

All exposed soil materials and stockpiles must be either temporarily or permanently seeded, fertilized and mulched in accordance with plan specifications. This is one of the most important features of the Erosion Control Plan, which will provide both temporary and permanent stabilization. Eroded or damaged lawn areas must be repaired until a 75% effective growth of vegetation is established and permanently maintained.

Record Keeping

Routine maintenance and inspections will be accomplished by the future property owner/developer [Michael Brigham, Landmark Hill, LLC; 79 Congress Street, Portsmouth, NH 03801, (603)-294-4000] until the condominium association had been formed and maintenance has been turned over to the association. At that time, routine maintenance and inspections will be the responsibility of the condominium association's maintenance staff or third party contracted by the property owner or condominium association. All inspections accomplished in accordance with this program shall be documented on the attached Inspection & Maintenance Log. Copies of the Log shall be kept by the property owner or condominium association, and be made available to the Department (Maine Department of Environmental Protection), upon request.



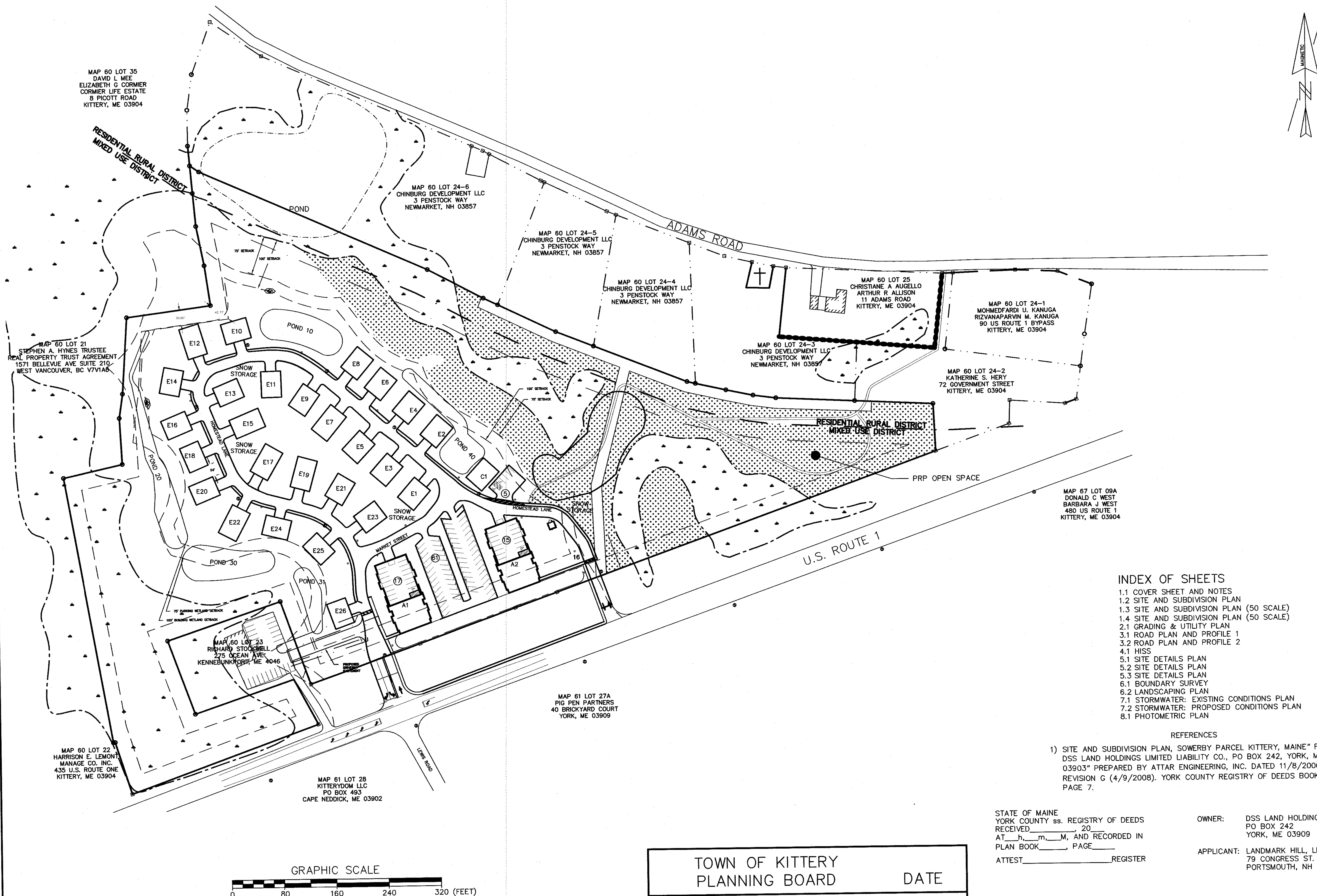
INSPECTION & MAINTENANCE LOG
THE HOMESTEAD – MIXED USE DEVELOPMENT

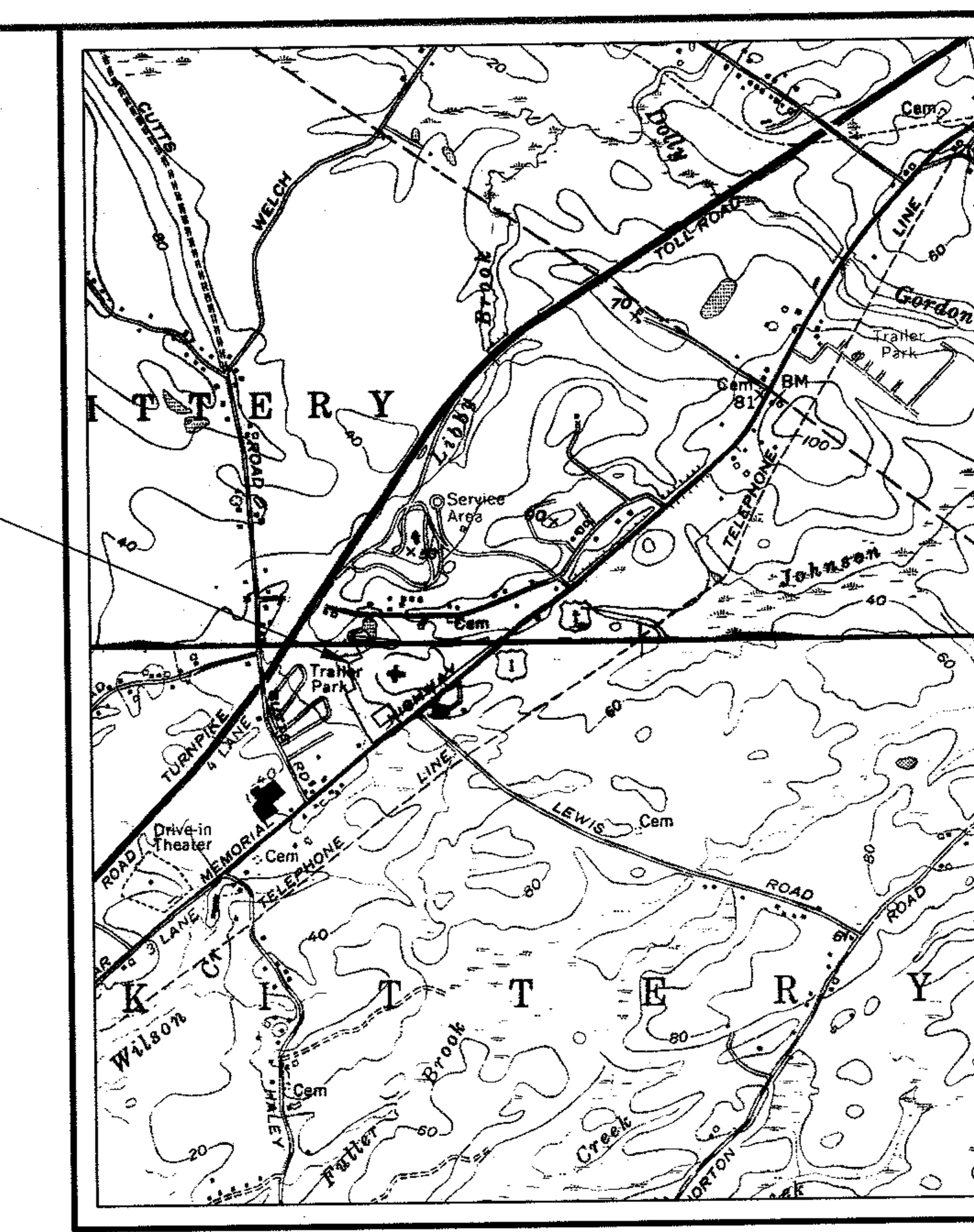
Date	Purpose[1]	Maintenance Done[2]	By

1. Purpose is the reason for the inspection. For example; "quarterly' or "after a significant rain event."
2. Maintenance Done means any maintenance required as a result of the inspection, such as trash removal or re-seeding of areas.

THE HOMESTEAD SUBDIVISION

U.S. ROUTE 1, KITTERY, MAINE





LOCATION MAP
SCALE: 1" = 2,000'

GENERAL NOTES

1) THIS PLAN PROVIDES DETAILS FOR A MIXED USE DEVELOPMENT AT 459 U.S. ROUTE 1 CONSISTING OF 26 SINGLE-FAMILY (ELDERLY) DWELLING UNITS, 2 BUILDINGS CONTAINING 16 APARTMENTS AND TWO COMMERCIAL RETAIL UNITS LOCATED WITHIN THE APARTMENT BUILDINGS AND 1 CLUB HOUSE/OFFICE BUILDING

2) THIS SITE WAS PREVIOUSLY APPROVED AS THE SOWERBY MIXED-USE PROJECT IN 2008. SEE REF. 1.

3) THE PARCEL, IDENTIFIED AS LOT 24 ON TAX MAP 60, CONTAINS APPROXIMATELY 20.12 ACRES; AND IS LOCATED WITHIN THE MIXED-USE (MU), RESIDENTIAL RURAL(R-RL) AND SHORELAND OVERLAY ZONING DISTRICTS. THE PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER SYSTEMS.

4) SPACE AND BULK REQUIREMENTS FOR THE MIXED USE ZONING DISTRICT ARE AS FOLLOWS:

MIXED USE DISTRICT	
MIN. LOT AREA	200,000 SF
MIN. STREET FRONTAGE	250'
MIN. FRONT SETBACK	30'
MIN. SIDE SETBACK	40'
MIN. REAR SETBACK	40'

5) PARKING IS CALCULATED AS FOLLOWS;

UNIT TYPE	NO. OF UNITS./SF	SPACES/UNIT	SF/UNIT	REQUIRED
ELDERLY	26 UNITS	1.5	N/A	39(DRIVEWAYS)
APARTMENTS	16 UNITS	2	N/A	32
RETAIL(A1/A2)	8,000 SF	N/A	175	46
RETAIL(C1)	2,000 SF	N/A	175	12
OFFICE(C1)	2,000 SF	N/A	250	8

TOTAL SPACES = 137 WITH 137 PROVIDED (DRIVEWAYS FOR ELDERLY AND LOTS FOR REMAINING)

6) BUILDABLE AREA/RESIDENTIAL DENSITY

TOTAL PARCEL AREA	=	876427.2 S.F.	=	20.12 AC.
LESS 50% OF WETLANDS SETBACK	=	137495.5 S.F.	=	3.16 AC.
LESS UNSUITABLE SOILS*	=	200630 S.F.	=	4.61 AC.
LESS RIGHTS OF WAY/EASEMENTS**	=	100687 S.F.	=	2.31 AC.
NET RESIDENTIAL AREA	=>	437614.7 S.F.	=	10.04 AC.

*INCLUDES WETLANDS, POORLY DRAINED AND VERY POORLY DRAINED SOILS
**INCLUDING TRAVELED WAYS AND PARKING
NET RESIDENTIAL DENSITY = 437614.7 – (26 X 10,000) – (16 X 7,500) = 57,614.7 => OK

7) COMMERCIAL SPACE REQUIREMENT IS CALCULATED AS FOLLOWS:
2 APARTMENT BLDGS X 9,000 SF X 2 FLOORS = 36000
2 RETAIL SPACES X 3750 SF = 9500
9500/36000 = 26.1% WHICH IS GREATER THAN 10%(REQUIRED).

8) PROPERTY LINES, WETLANDS, EXISTING CONDITIONS AND TOPOGRAPHY ARE FROM REFERENCE 1. WETLANDS WERE IDENTIFIED IN THE FIELD BY KENNETH A. WOOD, CWS IN DECEMBER, 1999 AND MICHAEL R. CUOMO, CWS, CSS IN MARCH, 2000. WETLANDS WERE LOCATED WITH SURVEY INSTRUMENT BY ATTAR ENGINEERING, INC. FROM DECEMBER, 1999 THROUGH APRIL, 2000. WETLAND DELINEATION WAS VERIFIED IN 2017 BY KENNETH A. WOOD, CWS. NO CHANGES WERE NOTED FROM THE PREVIOUS DELINEATION.

9) TOTAL OPEN SPACE REQUIRED IS 35%; 25% OF OPEN SPACE MUST BE IN FRONT 50% OF THE PARCEL: 20.23 AC X 0.35 = 7.08 AC WITH 7.29 AC PROVIDED: 7.08 AC X 0.25 =1.77 AC WITH 5.58 AC PROVIDED IN THE FRONT OF THE PARCEL.

10) LANDSCAPING ALONG THE FRONTAGE OF US ROUTE 1 SHALL CONSIST OF AT LEAST ONE SUGAR MAPLE (ACER SACCHARUM) OR APPROVED EQUAL ON 25' C.L. SPACING AND A MIX OF 10 SHRUBS AND/OR FLOWERING PERENNIAL PLANT SPECIES FOR EVERY 40' OF FRONTAGE

11) ALL BUILDINGS WILL BE SPRINKLED FOR FIRE PROTECTION.

12) TOTAL AREA TO BE DISTURBED: 9.79 ACRES, TOTAL IMPERVIOUS AREA: 3.72 ACRES, TOTAL LOT STREET FRONTAGE 1655.7 FT.

INDEX OF SHEETS

REFERENCES

1) SITE AND SUBDIVISION PLAN, SOWERBY PARCEL KITTERY, MAINE" FOR DSS LAND HOLDINGS LIMITED LIABILITY CO., PO BOX 242, YORK, MAINE 03903" PREPARED BY ATTAR ENGINEERING, INC. DATED 11/8/2006, REVISION G (4/9/2008). YORK COUNTY REGISTRY OF DEEDS BOOK 332, PAGE 7.

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED__________, 20___
AT___h,___m,___M, AND RECORDED IN
PLAN BOOK______, PAGE_____
ATTEST____________________REGISTER

OWNER: DSS LAND HOLDINGS LLC
PO BOX 242
YORK, ME 03909

APPLICANT: LANDMARK HILL, LLC
79 CONGRESS ST.
PORTSMOUTH, NH 03801

TOWN OF KITTERY
PLANNING BOARD DATE

LEGEND

SYMBOL	LINE TYPE
NEW SETBACK	
DESIGNATED OPEN SPACE	
PROPERTY LINE	
EXISTING CONTOUR	---XXX---
PROPOSED CONTOUR	XXX
PROPOSED WATER LINE	PW
PROPOSED SEWER LINE	PS
UNDER GROUND UTILITIES	PUGU
SEWER MANHOLE	
EXISTING WATER LINE	EW
EXISTING SEWER LINE	ES
UTILITY POLE	
IRON PIN	
STONE MONUMENT	
DRAINAGE STRUCTURE	
WATER VALVE	
WATER SHUT OFF	
HYDRANT	
RETAINING WALL	RTW
VERTICAL GRANITE CURB	

REVISIONS

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

STATE OF MAINE
KENNETH WOOD
LICENSED

1.1

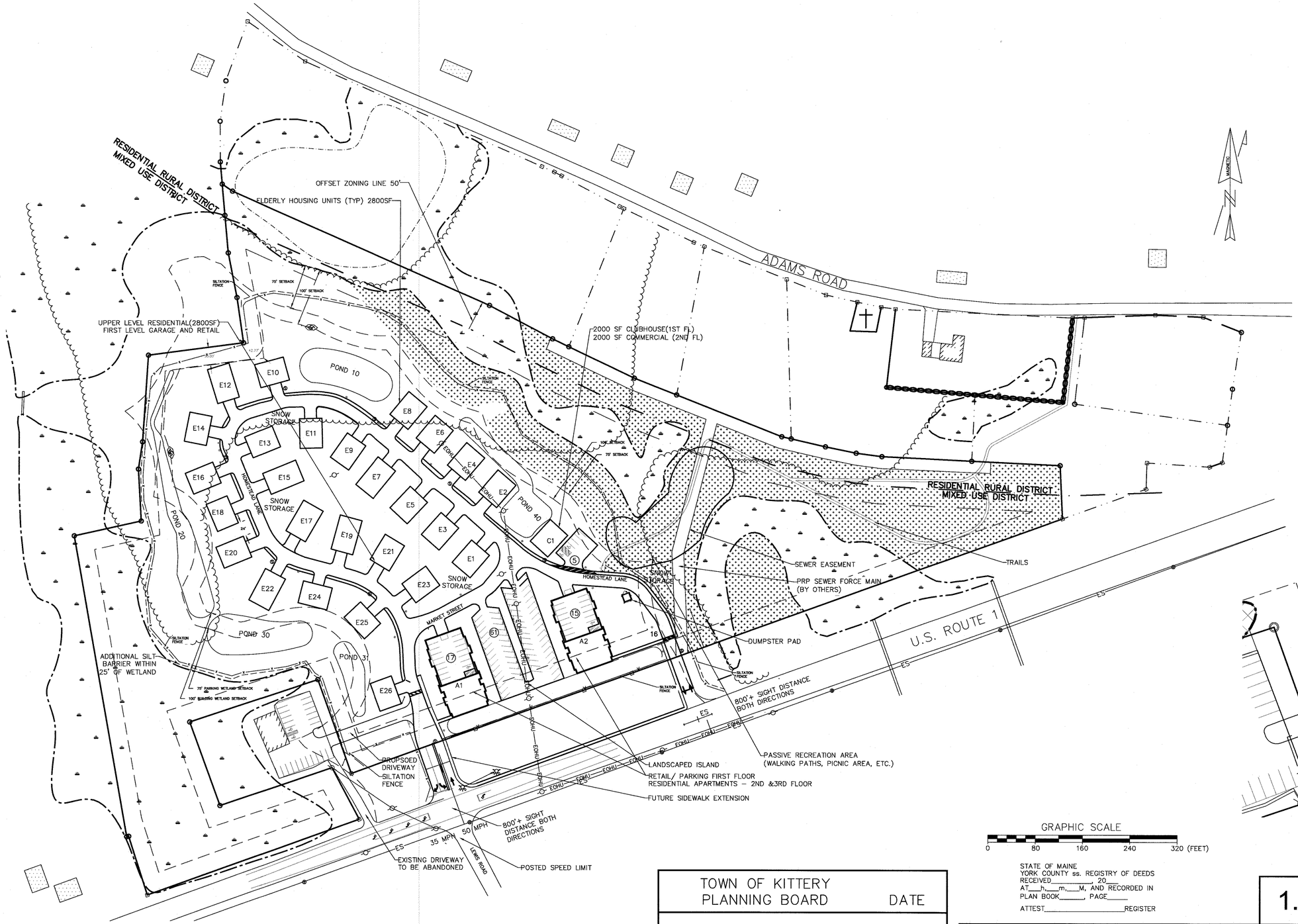
OVERALL SITE PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

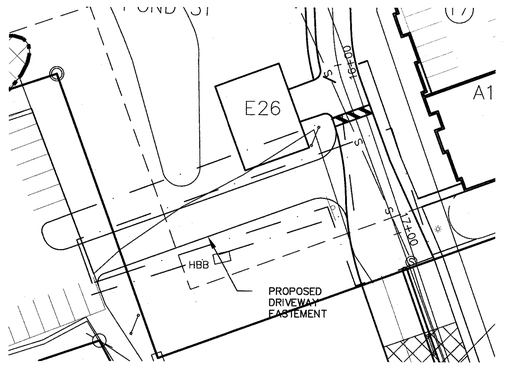
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 100'	APPROVED BY: 3/21/2018	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE D:03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 1.1

TAX MAP 24, LOT 60





DRIVEWAY EASEMENT
SCALE: 1" = 40'

GRAPHIC SCALE
0 80 160 240 320 (FEET)

GENERAL NOTES

1. SEWER MAINS TO BE 8" SDR 35 PVC. ALL OTHER APPURTENANCES SHALL MEET KITTERY SEWER DISTRICT STANDARDS.

2. ALL PIPES, VALVES, FITTINGS, AND CONNECTIONS SHALL MEET CURRENT KITTERY WATER DISTRICT STANDARDS.

3. ALL STORM DRAINS TO BE ADS N-12 (PE) OR APPROVED EQUAL.

4. A MINIMUM OF 5.0' OF COVER SHALL BE MAINTAINED OVER ALL WATER LINES.

5. CENTRAL MAINE POWER COMPANY WILL PREPARE THE ELECTRICAL PLAN FOR CONSTRUCTION. ALL ELECTRICAL, TELEPHONE, AND CABLE SERVICES WILL BE UNDERGROUND.

6. NEW WATER AND SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH RESPECTIVE DISTRICT REQUIREMENTS.

7. EACH E & S CELL REPRESENTS A LIMITED AREA TO BE CONSTRUCTED WITH ALL EROSION & SEDIMENT CONTROL MEASURES IN PLACE. ALL "CELLS" SHALL BE PROTECTED BY EROSION & SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AS REQUIRED BY THE E & S PLAN. EROSION & SEDIMENT CONTROL SHALL BE MAINTAINED FOR EACH CELL THROUGH-OUT THE COMPLETION OF THE ENTIRE PROJECT. THE CELLS SHALL BE ESTABLISHED IN THERE NUMERICAL ORDER.

LEGEND

NEW SETBACK	UNDER GROUND UTILITIES — PUGU —	DRAINAGE STRUCTURE	
DESIGNATED OPEN SPACE	SEWER MANHOLE	WATER VALVE	
PROPERTY LINE	EXISTING WATER LINE — EW —	WATER SHUT OFF	
EXISTING CONTOUR — XXX —	EXISTING SEWER LINE — ES —	HYDRANT	
PROPOSED CONTOUR — XXX —	UTILITY POLE	RETAINING WALL	RTW
PROPOSED WATER LINE — PW —	IRON PIN	VERTICAL GRANITE CURB	
PROPOSED SEWER LINE — PS —	STONE MONUMENT		

TOWN OF KITTERY
PLANNING BOARD DATE

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED_____, 20___
AT___h.___m.___M. AND RECORDED IN
PLAN BOOK_____, PAGE_____

ATTEST_____REGISTER

NO.	DESCRIPTION	DATE
	REVISIONS	
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

1.2

SITE AND SUBDIVISION PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED:	DRAWN BY:
1" = 80'		BRN
DATE: 02/08/2018	3/29/2018	REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 1.2

TAX MAP 24, LOT 60

LEGEND					
NEW SETBACK		UNDER GROUND UTILITIES	PUGU	DRAINAGE STRUCTURE	
DESIGNATED OPEN SPACE		SEWER MANHOLE		WATER VALVE	
PROPERTY LINE		EXISTING WATER LINE	EW	WATER SHUT OFF	
EXISTING CONTOUR	XXX	EXISTING SEWER LINE	ES	HYDRANT	
PROPOSED CONTOUR	XXX	UTILITY POLE		RETAINING WALL	RTW
PROPOSED WATER LINE	PW	IRON PIN		VERTICAL GRANITE CURB	
PROPOSED SEWER LINE	PS	STONE MONUMENT			

TOWN OF KITTERY
PLANNING BOARD DATE

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED__________, 20___
AT___h,___m,___M, AND RECORDED IN
PLAN BOOK______, PAGE______
ATTEST____________________REGISTER

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

STATE OF MAINE LICENSED PROFESSIONAL ENGINEER

1.3

SITE AND SUBDIVISION PLAN 50 SCALE
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 50	APPROVED BY:	DRAWN BY: BRN
DATE: 02/08/2018	3/27/2018	REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 1.3

TAX MAP 24, LOT 60

GRAPHIC SCALE

0 50 100 150 200 (FEET)

LEGEND

NEW SETBACK		UNDER GROUND UTILITIES	PUGU	DRAINAGE STRUCTURE	
DESIGNATED OPEN SPACE		SEWER MANHOLE		WATER VALVE	
PROPERTY LINE		EXISTING WATER LINE	EW	WATER SHUT OFF	
EXISTING CONTOUR	XXX	EXISTING SEWER LINE	ES	HYDRANT	
PROPOSED CONTOUR	XXX	UTILITY POLE		RETAINING WALL	RTW
PROPOSED WATER LINE	PW	IRON PIN		VERTICAL GRANITE CURB	
PROPOSED SEWER LINE	PS	STONE MONUMENT			

TOWN OF KITTERY PLANNING BOARD — DATE

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED__________, 20___
AT___h,___m,___M, AND RECORDED IN
PLAN BOOK______, PAGE______
ATTEST____________________REGISTER

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

1.4

SITE AND SUBDIVISION 50 SCALE
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 50'	APPROVED BY: 3/28/18	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 1.4

TAX MAP 24, LOT 60

GENERAL NOTES

1. SEWER MAINS TO BE 8" SDR 35 PVC. ALL OTHER APPURTENANCES SHALL MEET KITTERY SEWER DISTRICT STANDARDS.

2. ALL PIPES, VALVES, FITTINGS, AND CONNECTIONS SHALL MEET CURRENT KITTERY WATER DISTRICT STANDARDS.

3. ALL STORM DRAINS TO BE ADS N-12 (PE) OR APPROVED EQUAL.

4. A MINIMUM OF 5.0' OF COVER SHALL BE MAINTAINED OVER ALL WATER LINES.

5. CENTRAL MAINE POWER COMPANY WILL PREPARE THE ELECTRICAL PLAN FOR CONSTRUCTION. ALL ELECTRICAL, TELEPHONE, AND CABLE SERVICES WILL BE UNDERGROUND.

6. NEW WATER AND SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH RESPECTIVE DISTRICT REQUIREMENTS.

7. EACH E & S CELL REPRESENTS A LIMITED AREA TO BE CONSTRUCTED WITH ALL EROSION & SEDIMENT CONTROL MEASURES IN PLACE. ALL "CELLS" SHALL BE PROTECTED BY EROSION & SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AS REQUIRED BY THE E & S PLAN. EROSION & SEDIMENT CONTROL SHALL BE MAINTAINED FOR EACH CELL THROUGH-OUT THE COMPLETION OF THE ENTIRE PROJECT. THE CELLS SHALL BE ESTABLISHED IN THERE NUMERICAL ORDER.

DRAINAGE STRUCTURE SCHEDULE

DESC	RIM ELEV	INV IN	INV OUT
–	–	–	–
CB 2	59.3	56.3	56.2
CB 3	59.5	–	56.4
CB 4	62.7	56.4	56.3
CB 5	60.4	57.0	56.9
–	–	–	–
CB 7	62	57.4	57.3
CB 8	62	59.5	59.4
–	–	–	–
–	–	–	–
CB 11	63.0	–	58.0
CB 12	58.0	54.9	54.8
CB 13	58.4	–	55.4

LEGEND

- NEW SETBACK
- DESIGNATED OPEN SPACE
- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WATER LINE — PW —
- PROPOSED SEWER LINE — PS —
- UNDER GROUND UTILITIES — PUGU —
- SEWER MANHOLE
- EXISTING WATER LINE — EW —
- EXISTING SEWER LINE — ES —
- UTILITY POLE
- IRON PIN
- STONE MONUMENT
- DRAINAGE STRUCTURE
- WATER VALVE
- WATER SHUT OFF
- HYDRANT
- RETAINING WALL — RTW —
- VERTICAL GRANITE CURB

GRAPHIC SCALE

0 40 80 120 160 (FEET)

NO.	DESCRIPTION	DATE
	REVISIONS	
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

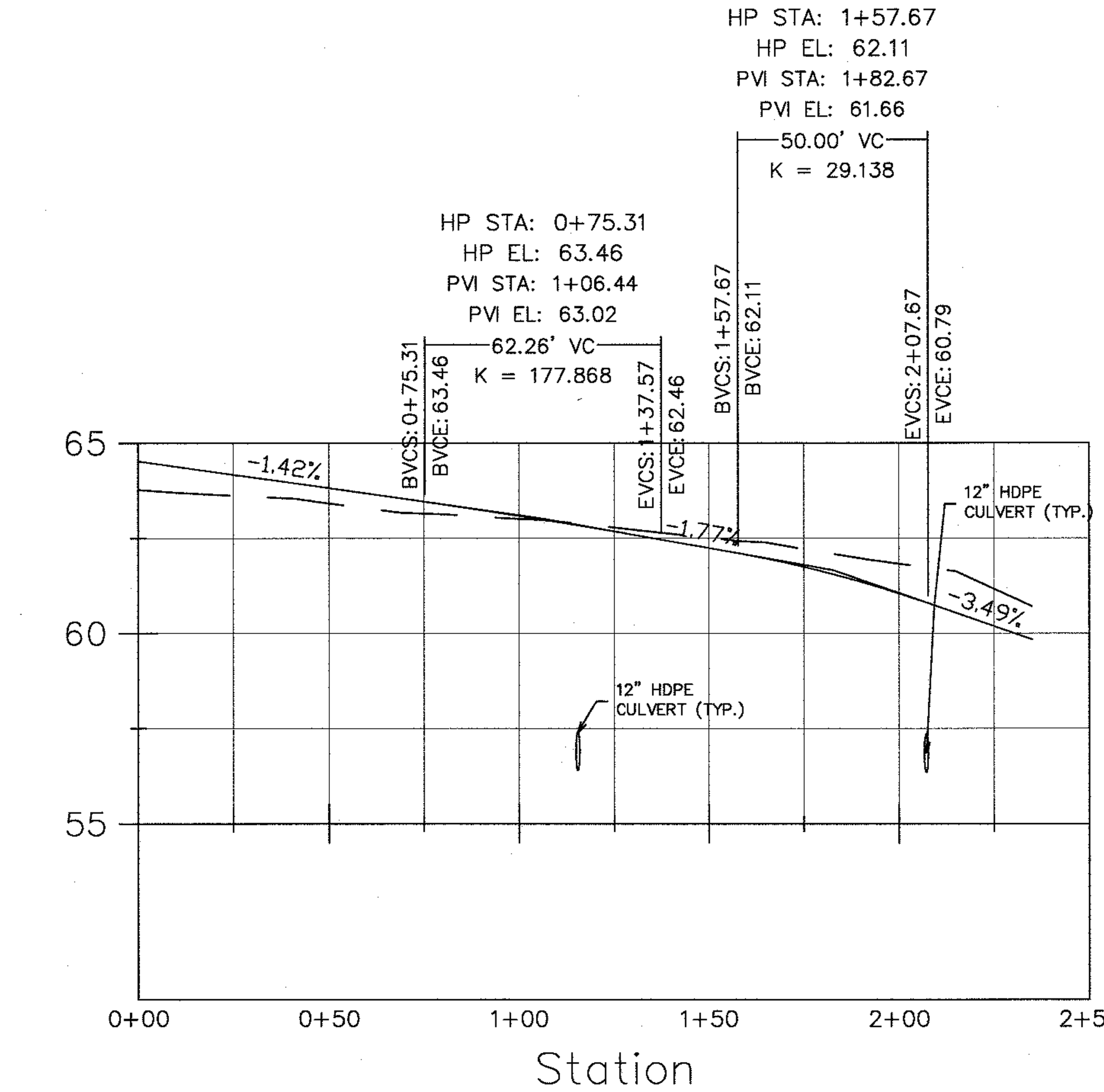
2.1

GRADING AND UTILITY PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

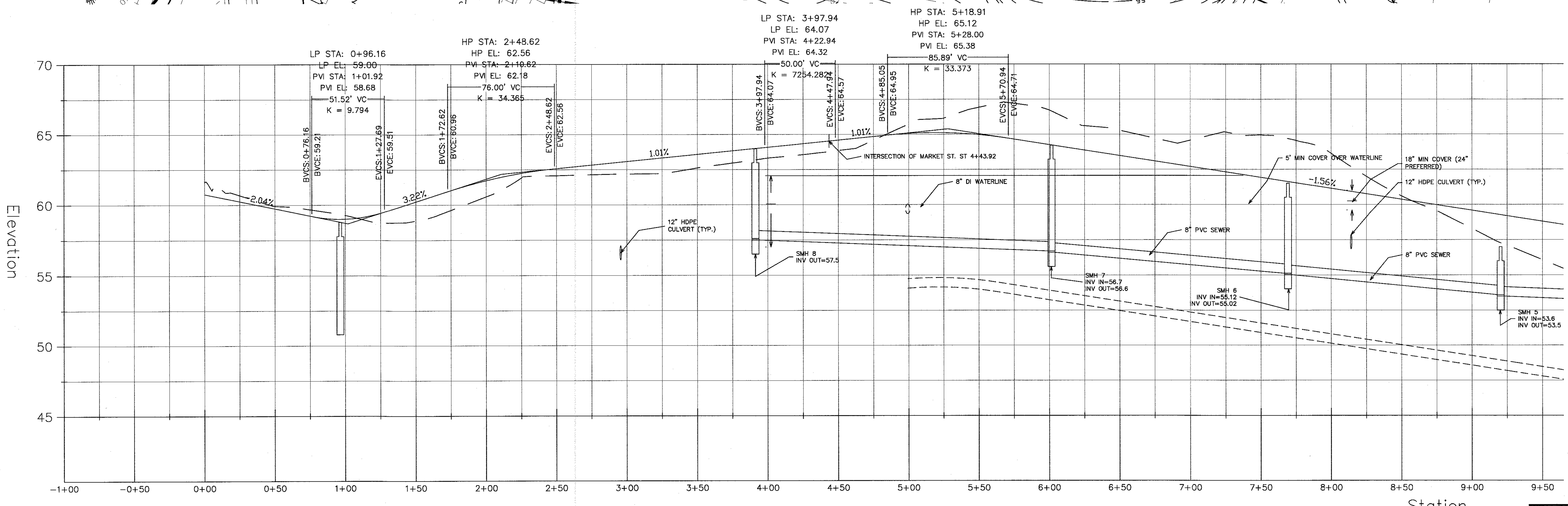
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 40'
DATE: 02/08/2018
APPROVED BY:
DRAWN BY: BRN
REVISION : DATE D: 03/27/2018
JOB NO: C052-18
CAD FILE: MBRIGHAM LBASE
SHEET 2.1
TAX MAP 24, LOT 60



ROAD PROFILE – MARKET STREET
H. SCALE: 1" = 40'
V. SCALE: 1" = 4'



ROAD PROFILE – HOMESTEAD LANE
H. SCALE: 1" = 40'
V. SCALE: 1" = 4'

GRAPHIC SCALE
0 40 80 120 160 (FEET)

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

3.1

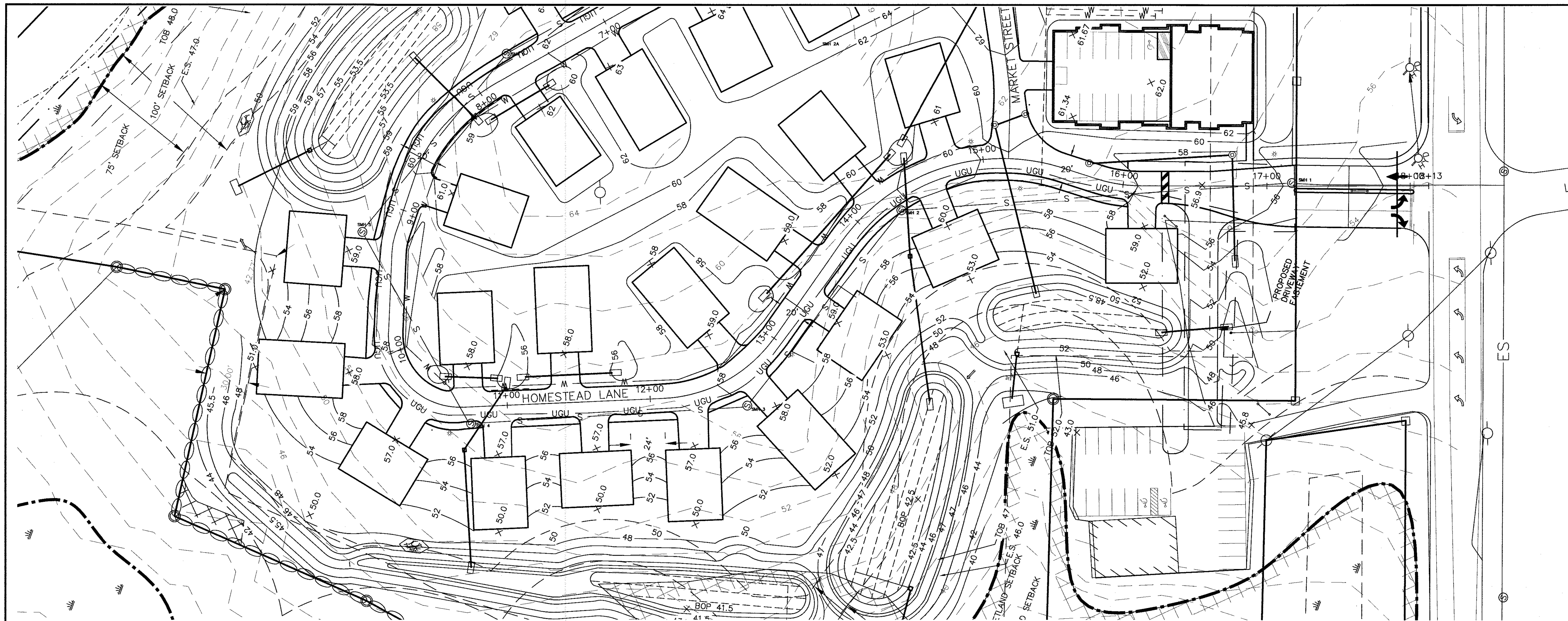
ROAD PLAN AND PROFILE
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

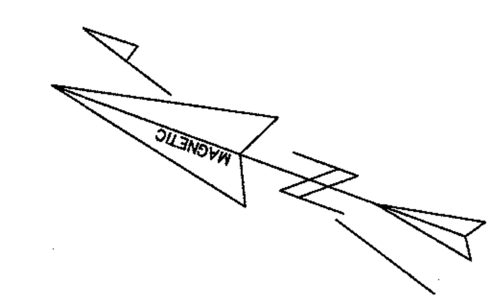
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

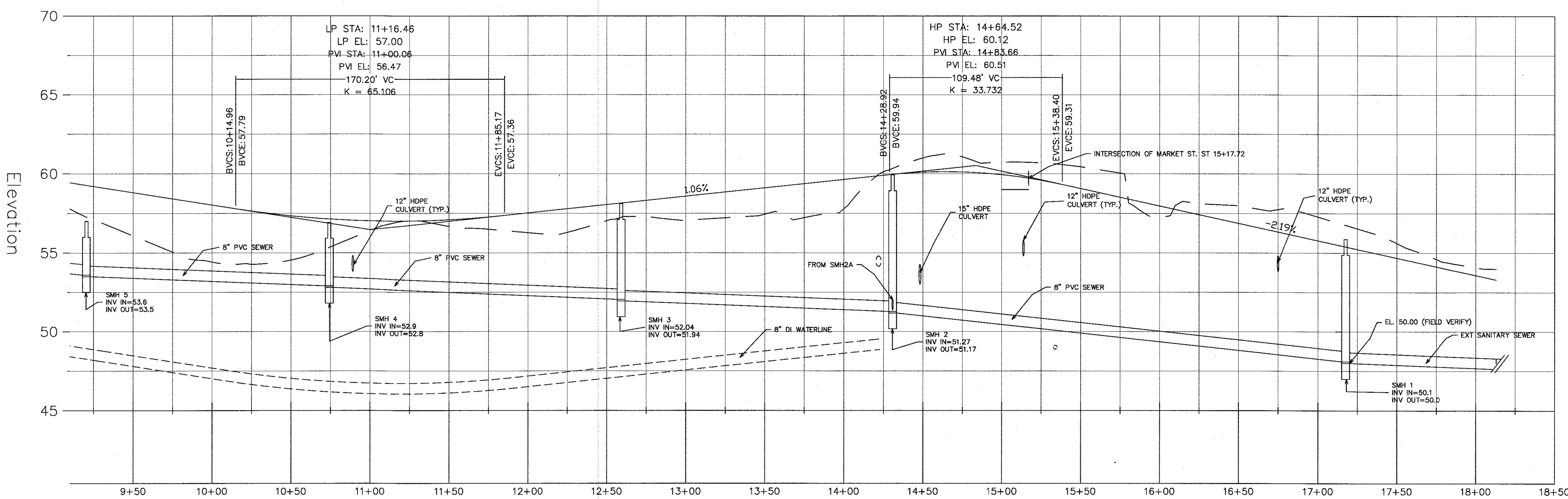
ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 40'	APPROVED BY:	DRAWN BY: BRN
DATE: 02/08/2018	3/27/20	REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 3.1

TAX MAP 24, LOT 60







ROAD PROFILE – HOMESTEAD LANE

H. SCALE: 1" = 40'
V. SCALE: 1" = 4'

GRAPHIC SCALE

0 40 80 120 160 (FEET)

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
	REVISIONS	

3.2

ROAD PLAN AND PROFILE
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 40'	APPROVED BY:	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE D:03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 3.2

TAX MAP 24, LOT 60

SYMBOL	SOIL SERIES
Bm	BIDDEFORD MUCKY PEAT*
BS	BIDDEFORD–SCANTIC COMPLEX, FILLED AND DITCHED*
DANI	DEVELOPED AREA NOT INVESTIGATED
Dx	DIXFIELD FINE SANDY LOAM
Em	ELMWOOD VERY FINE SANDY LOAM
LT	LYMAN–TUNBRIDGE COMPLEX
Sc	SCANTIC SILT LOAM*
Sw	SWANTON VERY FINE SANDY LOAM
Ws	WESTBURY FINE SANDY LOAM
	* WETLAND SOILS

SOIL BOUNDARY

SOIL/WETLAND BOUNDARY

SOIL BORING

TEST PIT

SLOPE LEGEND

(NONE)	0 – 3%
B	3 – 8%
C	8 – 15%
D	15 – 25%

GRAPHIC SCALE
0 100 20 300 400 (FEET)

GENERAL NOTES

1. PROPERTY LINES, WETLANDS, EXISTING CONDITIONS AND TOPOGRAPHY ARE FROM REFERENCE 1. WETLANDS WERE IDENTIFIED IN THE FIELD BY KENNETH A. WOOD, CWS IN DECEMBER, 1999 AND MICHAEL R. CUOMO, CWS, CSS IN MARCH, 2000. WETLANDS WERE LOCATED WITH SURVEY INSTRUMENT BY ATTAR ENGINEERING, INC. FROM DECEMBER, 1999 THROUGH APRIL, 2000. WETLAND DELINEATION WAS VERIFIED IN 2017 BY KENNETH A. WOOD, CWS. NO CHANGES WERE NOTED FROM THE PREVIOUS DELINEATION.

2. SOIL TYPES SHOWN ON THIS PLAN WERE IDENTIFIED BY MICHAEL CUOMO (MAINE CERTIFIED SOIL SCIENTIST #211) IN APRIL, 2000.

10 JAN 2018

MICHAEL CUOMO, MAINE CERTIFIED SOIL SCIENTIST #211

STATE OF MAINE · MICHAEL CUOMO #211 · CERTIFIED SOIL SCIENTIST

THIS MAP COMPLIES WITH THE STANDARDS FOR
CLASS "B" HIGH INTENSITY SOIL SURVEY.
SEE REPORT DATED 14 APRIL 2000 FOR DESCRIPTION METHODS OF SOIL.

NO.	DESCRIPTION REVISIONS	DATE

4.1

HIGH INTENSITY SOIL SURVEY
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR:
LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439–6023 FAX: (207)439–2128

SCALE: 1" = 100'	APPROVED BY: 1/18/2018	DRAWN BY: BRN
DATE: 12/20/2017		REVISION : DATE -:-
JOB NO: C052–17	CAD FILE: MBRIGHAM LBASE	SHEET 4.1

TAX MAP 24, LOT 60

EROSION & SEDIMENTATION CONTROL NOTES

1. SILTATION FENCE OR HAY BALE BARRIERS WILL BE INSTALLED DOWNSLOPE OF ALL STRIPPING OR CONSTRUCTION OPERATIONS. A DOUBLE SILT FENCE BARRIER SHALL BE INSTALLED DOWNSLOPE OF ANY SOIL MATERIAL STOCKPILES. SILT FENCES SHALL BE INSPECTED AFTER EACH RAIN EVENT AND DAILY DURING PROLONGED RAIN. SILT AND SOIL PARTICLES ACCUMULATING BEHIND THE FENCE SHALL BE REMOVED AFTER EACH SIGNIFICANT RAIN EVENT AND IN NO INSTANCE SHOULD ACCUMULATION EXCEED 1/2 THE HEIGHT OF THE FENCE. TORN OR DAMAGED AREAS SHALL BE REPAIRED.
2. TEMPORARY AND PERMANENT VEGETATION AND MULCHING IS AN INTEGRAL COMPONENT OF THE EROSION AND SEDIMENTATION CONTROL PLAN. ALL AREAS SHALL BE INSPECTED AND MAINTAINED UNTIL THE DESIRED VEGETATIVE COVER IS ESTABLISHED. THESE CONTROL MEASURES ARE ESSENTIAL TO EROSION PREVENTION AND ALSO REDUCE COSTLY REWORK OF GRADED AND SHAPED AREAS.
3. SEEDING, FERTILIZER AND LIME RATES AND TIME OF APPLICATION WILL BE DEPENDENT ON SOIL REQUIREMENTS. TEMPORARY VEGETATION SHALL BE MAINTAINED IN THESE AREAS UNTIL PERMANENT SEEDING IS APPLIED. ADDITIONALLY, EROSION AND SEDIMENTATION MEASURES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
4. ALL LAWN AREA, OUTER POND SIDE SLOPES AND SWALES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 2 LB/ACRE REDTOP AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 42 LB/ACRE. FERTILIZER AND LIME RATES SHALL BE DEPENDENT ON SOIL TESTING. IN THE ABSENCE OF SOIL TESTS, FERTILIZE WITH 10-20-20 (N-P205-K201) AT 800 LB/ACRE AND LIME AT 3 TONS/ACRE. MULCH WITH HAY AT 70-90 LB/1000 S.F. 4" OF LOAM SHALL BE APPLIED PRIOR TO SEEDING.
5. POND BOTTOMS AND INNER POND SIDESLOPES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 8 LB/ACRE BIRDSFOOT TREFOIL AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 48 LB/ACRE. SEE THE ABOVE NOTE FOR FERTILIZER, LIME AND MULCHING RATES.
6. TEMPORARY VEGETATION OF ALL DISTURBED AREAS, MATERIAL STOCKPILES AND OTHER SUCH AREAS SHALL BE ESTABLISHED BY SEEDING WITH EITHER WINTER RYE AT A RATE OF 112 LB/ACRE OR ANNUAL RYEGRASS AT A RATE OF 40 LB/ACRE. WINTER RYE SHALL BE USED FOR FALL SEEDING AND ANNUAL RYEGRASS FOR SHORT DURATION SEEDING. SEEDING SHALL BE ACCOMPLISHED BEFORE OCTOBER 1.
7. TEMPORARY SEEDING OF DISTURBED AREAS SHALL BE ACCOMPLISHED BEFORE OCTOBER 1. PERMANENT SEEDING SHALL BE ACCOMPLISHED BEFORE SEPTEMBER 15.
8. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY AT A RATE OF 2 BALES (70-90 LB) PER 1000 S.F. OF SEEDED AREA.
9. SLOPES 2:1 OR STEEPER SHALL BE TREATED WITH POLYJUTE OPEN WEAVE GEOTEXTILE (OR EQUIVALENT) AFTER SEEDING. JUTE MATS SHALL BE ANCHORED PER MANUFACTURER'S SPECIFICATIONS.
10. EXCESSIVE DUST CAUSED BY CONSTRUCTION OPERATIONS SHALL BE CONTROLLED BY APPLICATION OF WATER OR CALCIUM CHLORIDE.
11. THE CONTRACTOR MAY OPT TO USE EROSION CONTROL MIX BERM AS A SEDIMENT BARRIER IN LIEU OF SILTATION FENCE OR HAY BALE BARRIERS WITH APPROVAL FROM THE INSPECTING ENGINEER.
12. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

EROSION & SED. CONTROL NOTES (CONT.)

13. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
14. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
15. PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROW'S. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
16. WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
17. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILTATION FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
18. IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
19. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
20. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
21. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. THESE STANDARDS CAN BE FOUND IN THE FOLLOWING DOCUMENT: MDEP CHAPTER 500 (STORMWATER MANAGEMENT), APPENDIX C. HOUSEKEEPING. HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SPILL PREVENTION, GROUNDWATER PROTECTION, FUGITIVE SEDIMENT AND DUST, DEBRIS AND OTHER MATERIALS, EXCAVATION DEWATERING, AUTHORIZED NON-STORMWATER DISCHARGES AND UNAUTHORIZED NON-STORMWATER DISCHARGES.

WINTER CONSTRUCTION NOTES

NOVEMBER 1 – APRIL 15

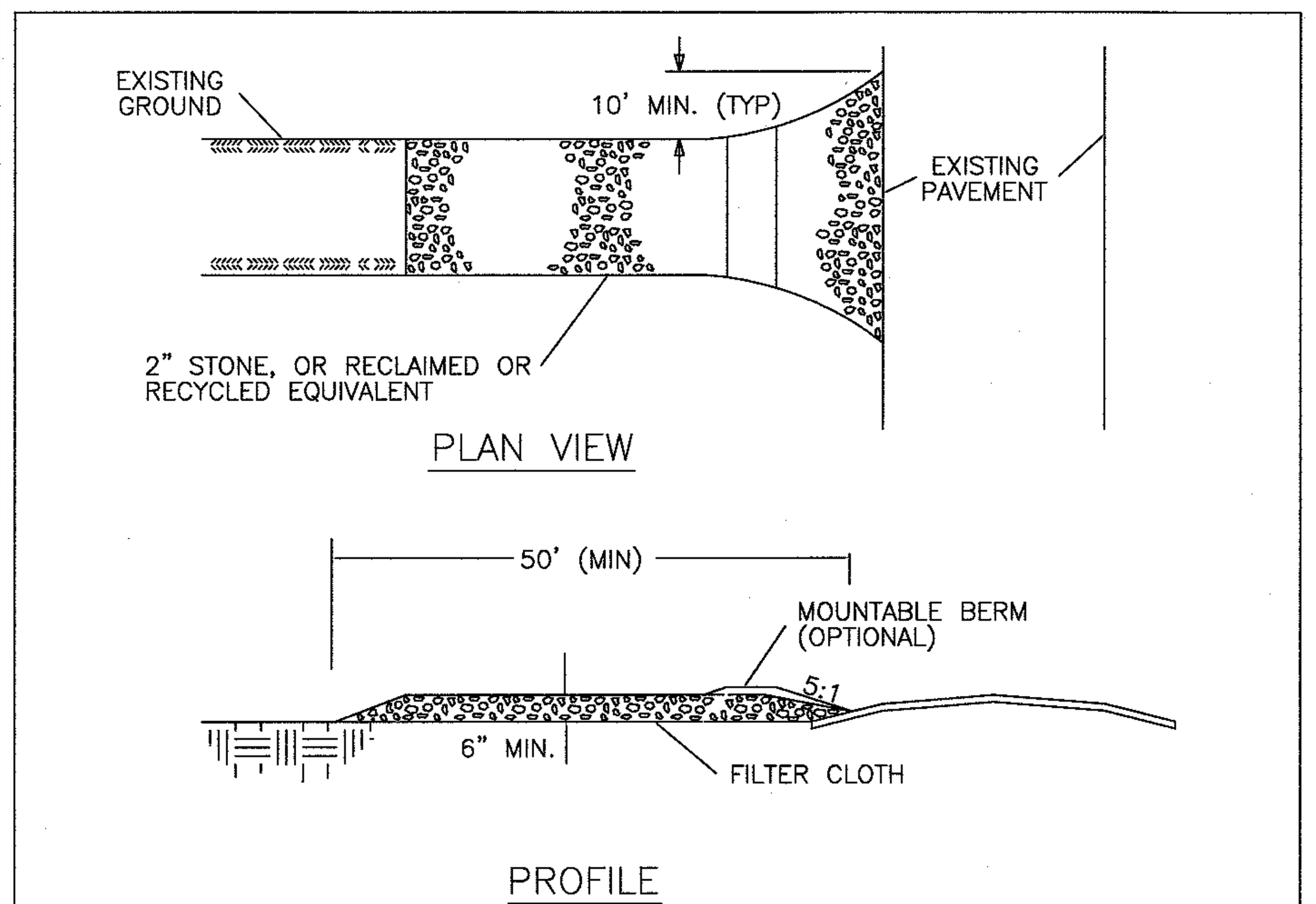
1. AN AREA SHALL BE CONSIDERED STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH HAY AT A RATE OF 100 LB/1000 S.F. OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SO THAT THE SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
2. FROM OCTOBER 15 TO APRIL 1, LOAM AND SEED WILL NOT BE REQUIRED. DURING PERIODS OF TEMPERATURES ABOVE FREEZING, DISTURBED AREAS SHALL BE FINE GRADED AND PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL PERMANENT SEEDING CAN BE APPLIED. AFTER NOVEMBER 1, DISTURBED AREAS MAY BE LOAMED, FINE GRADED AND DORMANT SEEDED AT A RATE 200-300% HIGHER THAN THE SPECIFIED PERMANENT SEEDING RATE. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, DISTURBED AREAS SHALL BE GRADED BEFORE FREEZING AND TEMPORARILY STABILIZED WITH MULCH. DISTURBED AREAS SHALL NOT BE LEFT OVER THE WINTER OR FOR ANY OTHER EXTENDED PERIOD OF TIME UNLESS STABILIZED WITH MULCH.
3. FROM NOVEMBER 1 TO APRIL 15 ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACK OR WOOD CELLULOSE FIBER. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 3%, SLOPES EXPOSED TO DIRECT WINDS AND FOR SLOPES GREATER THAN 8%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1, THE SAME APPLIES TO ALL SLOPES GREATER THAN 8%.
4. SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
5. FOR WINTER STABILIZATION, HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE SHALL BE STABILIZED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW.
6. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE SHALL BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
7. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, SHALL BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE MDEP.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON SUCH SLOPES.

E&S INSPECTION/MAINTENANCE DURING CONSTRUCTION

A. INSPECTION AND CORRECTIVE ACTION. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.

B. MAINTENANCE. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

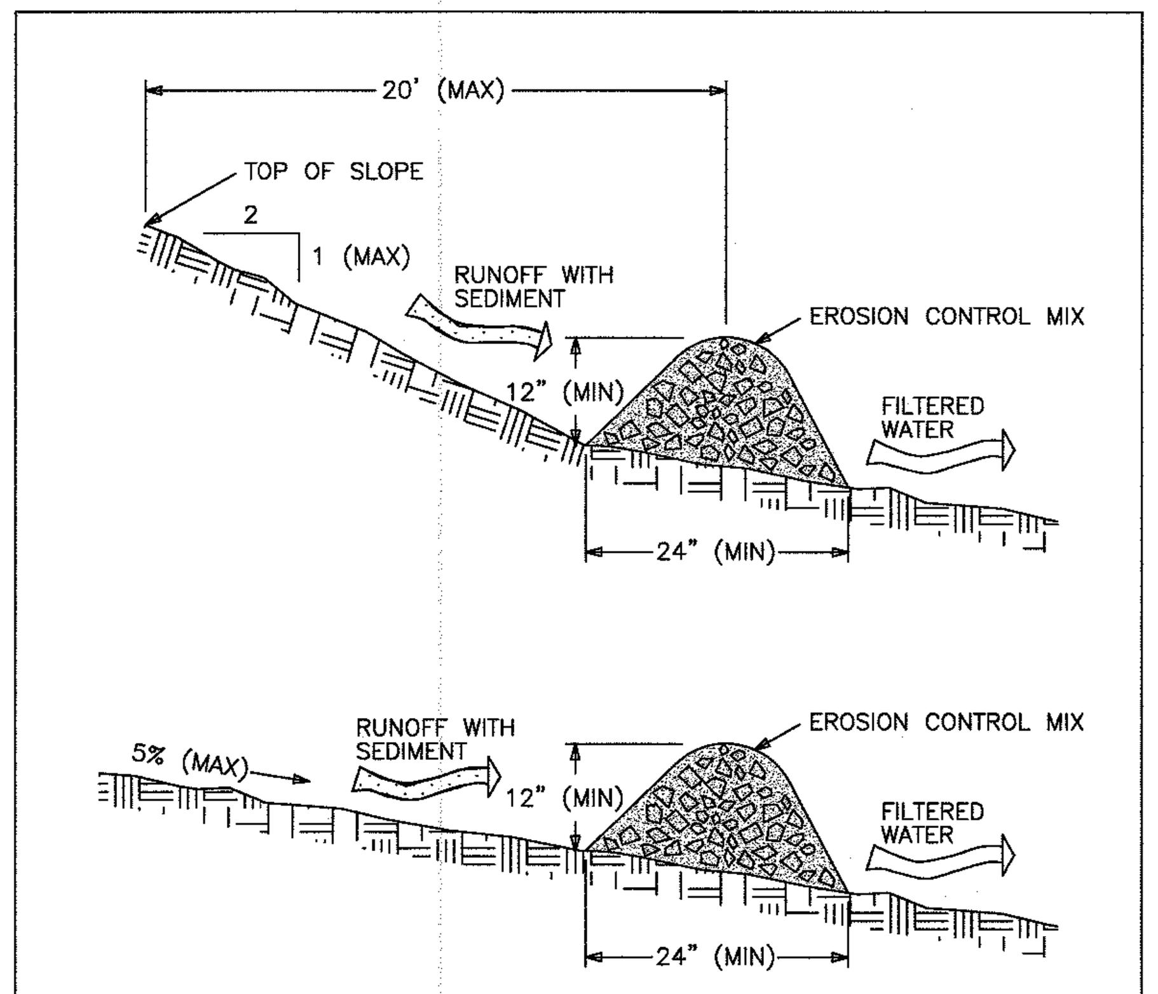
C. DOCUMENTATION. KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.



NOTES:

1. GEOTEXTILE: PLACE FILTER CLOTH OVER ENTIRE AREA TO BE COVERED WITH AGGREGATE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENTIAL LOT.
2. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED. IF PIPING IS IMPOSSIBLE, A MOUNTABLE BERM WITH A 5:1 SLOPE WILL BE PERMITTED.

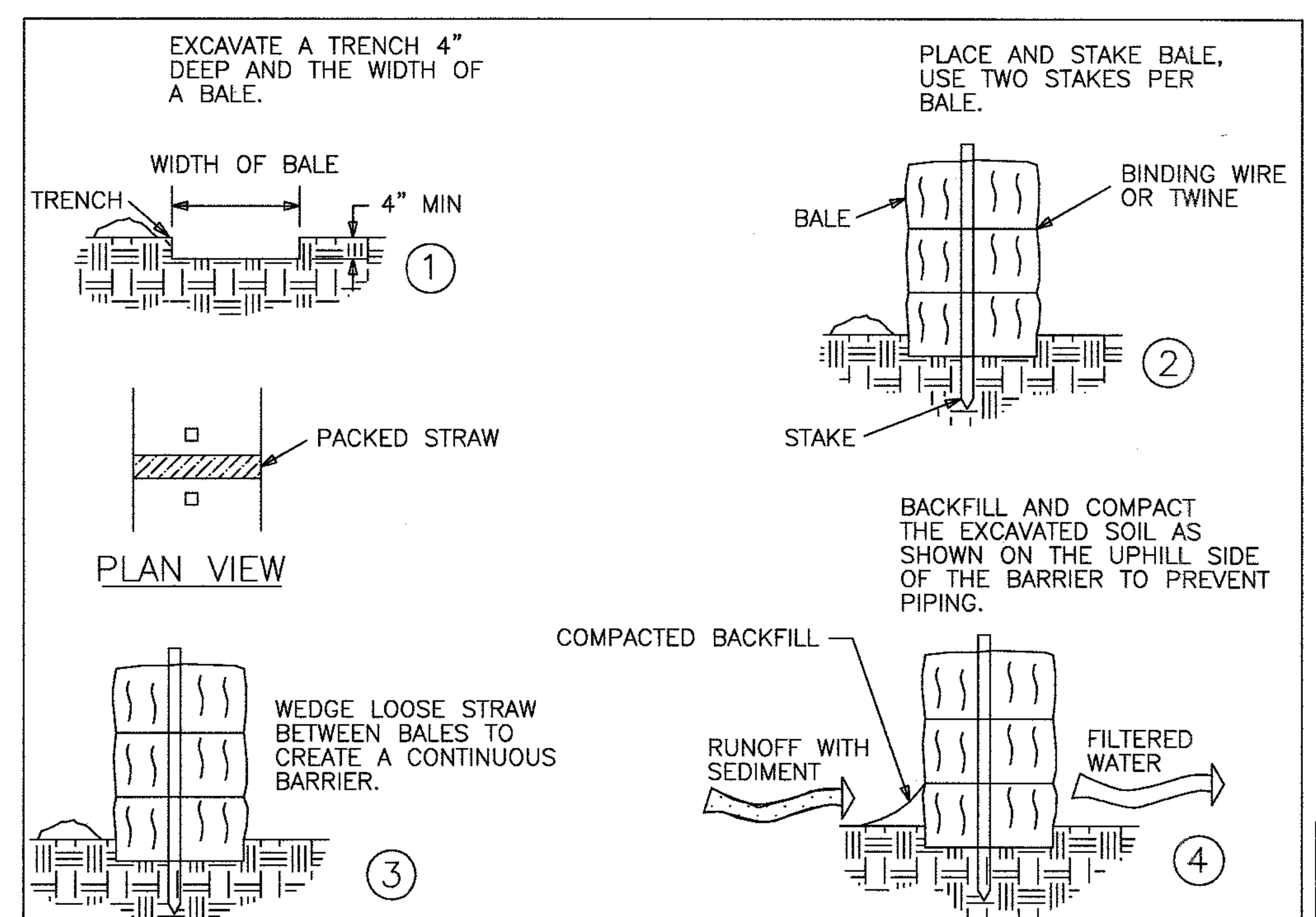
STABILIZED CONSTRUCTION ENTRANCE



EROSION CONTROL MIX COMPOSITION STANDARDS:

- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85% PASSING A 0.75" SCREEN.
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX
- SOLUBLE SALTS CONTENT SHALL BE <4.0 mmhos/cm
- THE pH SHOULD FALL BETWEEN 5.0 AND 8.0

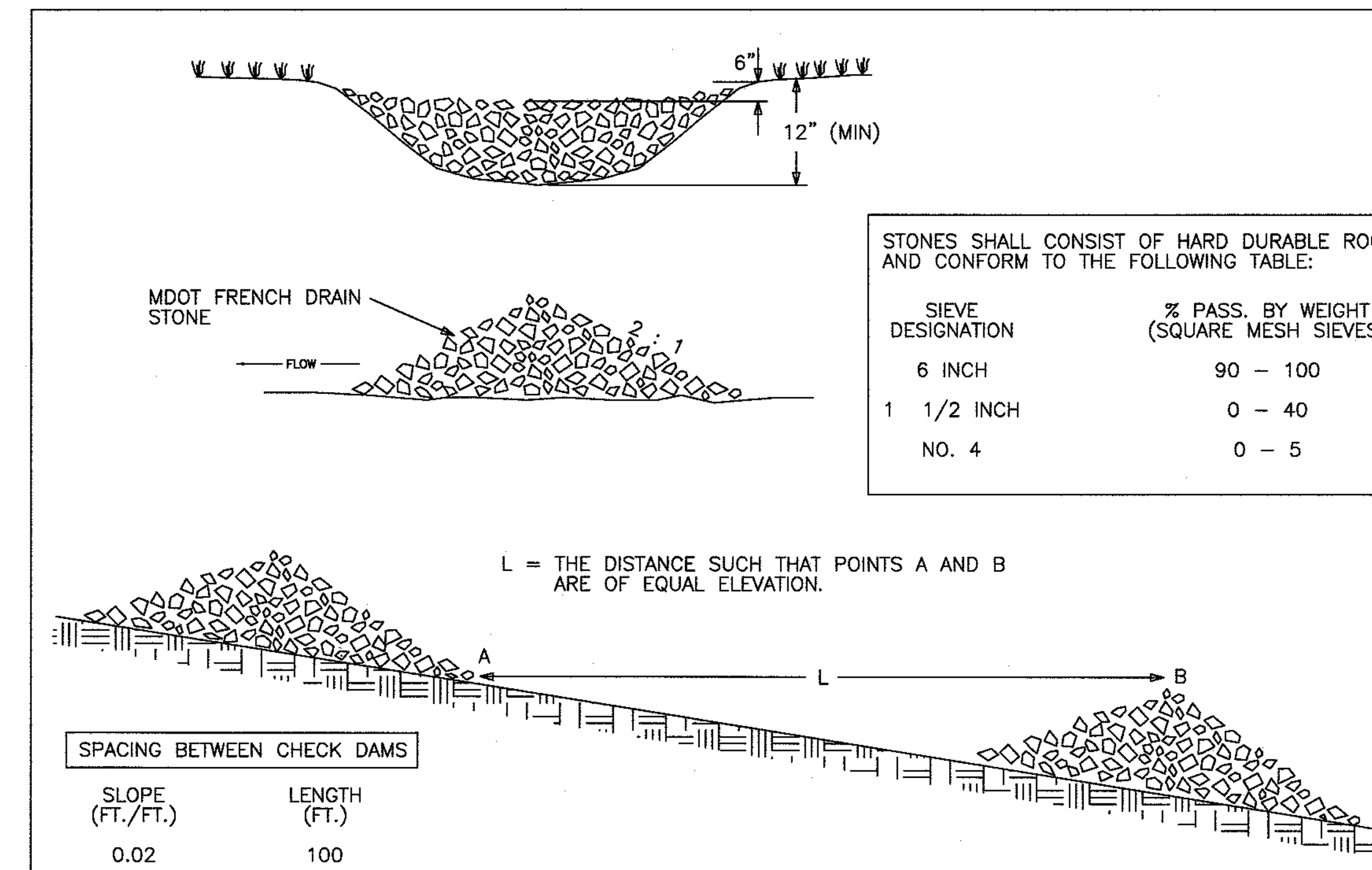
EROSION CONTROL MIX BERM (NTS)



NOTES:

1. PLACE BALES IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR.
2. PLACE BALES 10' AWAY FROM THE TOE OF SLOPE.
3. IN SLOPING AREAS WHERE SURFACE FLOW FOLLOWS THE BALE LINE, INSTALL PERPENDICULAR BALE CHECKS AT APPROPRIATE INTERVALS (100' MAX.)

HAY BALE BARRIER (NTS)



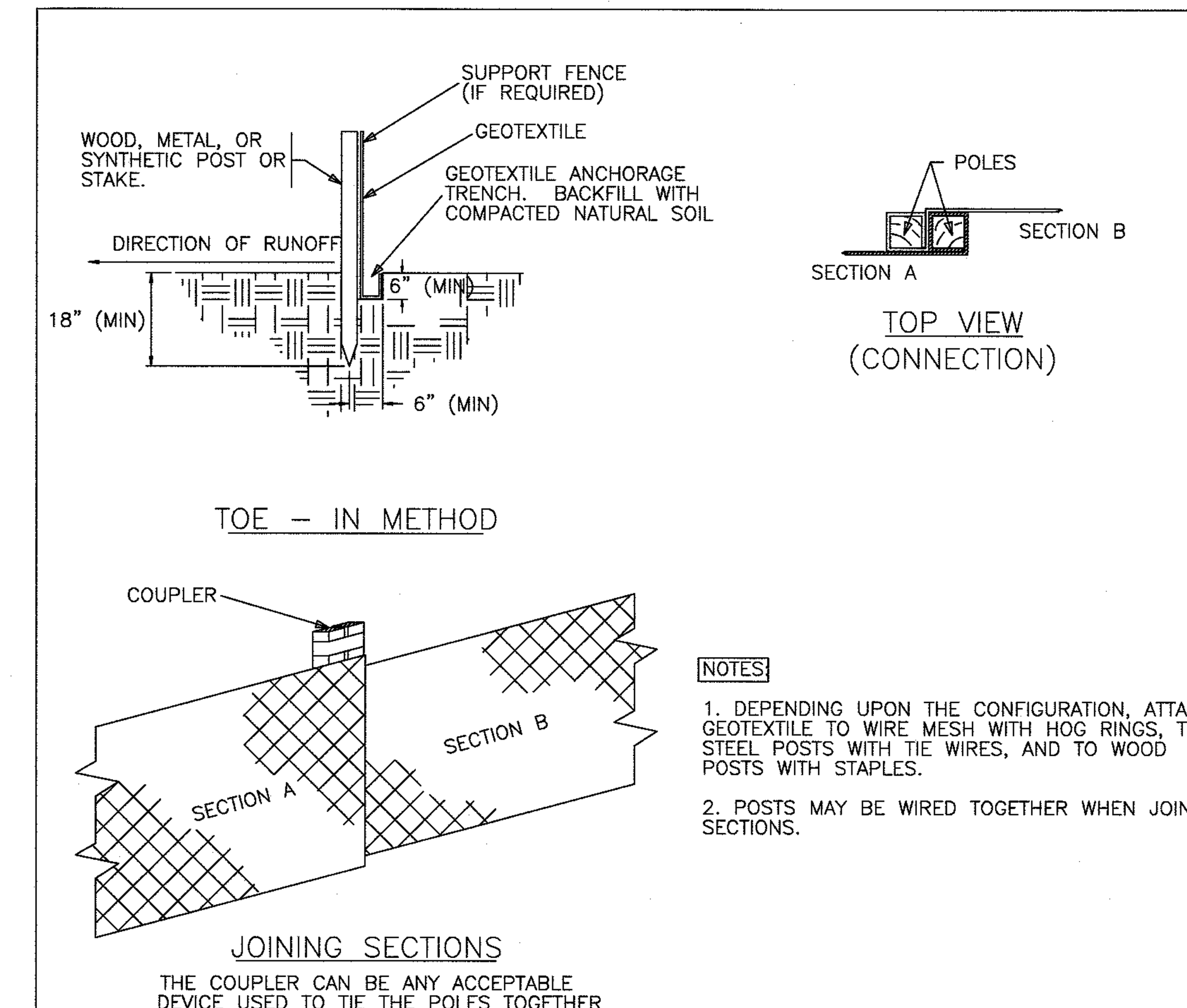
STONES SHALL CONSIST OF HARD DURABLE ROCK AND CONFORM TO THE FOLLOWING TABLE:

SIEVE DESIGNATION	% PASS. BY WEIGHT (SQUARE MESH SIEVES)
6 INCH	90 – 100
1 1/2 INCH	0 – 40
NO. 4	0 – 5

SPACING BETWEEN CHECK DAMS

SLOPE (FT./FT.)	LENGTH (FT.)
0.02	100
0.03	66
0.04	50
0.05	40
0.08	25
0.10	20
0.12	17
0.15	13

STONE CHECK DAM (NTS)



NOTES:

1. DEPENDING UPON THE CONFIGURATION, ATTACH GEOTEXTILE TO WIRE MESH WITH HOG RINGS, TO STEEL POSTS WITH TIE WIRES, AND TO WOOD POSTS WITH STAPLES.
2. POSTS MAY BE WIRED TOGETHER WHEN JOINING SECTIONS.

TEMPORARY SILT FENCE – NTS

NO.	DESCRIPTION	DATE
	REVISIONS	

5.1

SITE DETAILS
THE HOMESTEAD
459 U.S. ROUTE 1, KITTERY, MAINE

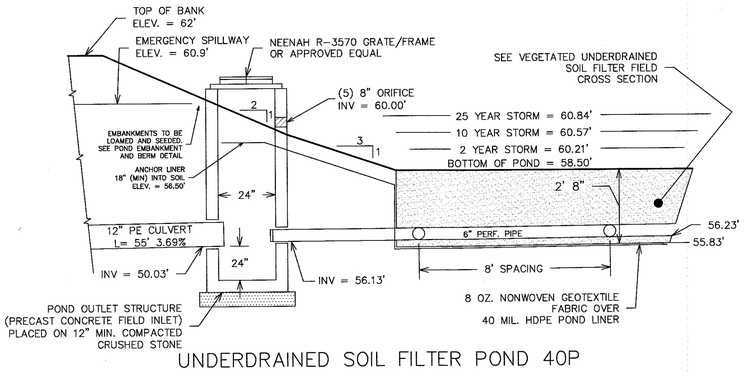
FOR: LANDMARK HILL, LLC.
79 CONGRESS STREET
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

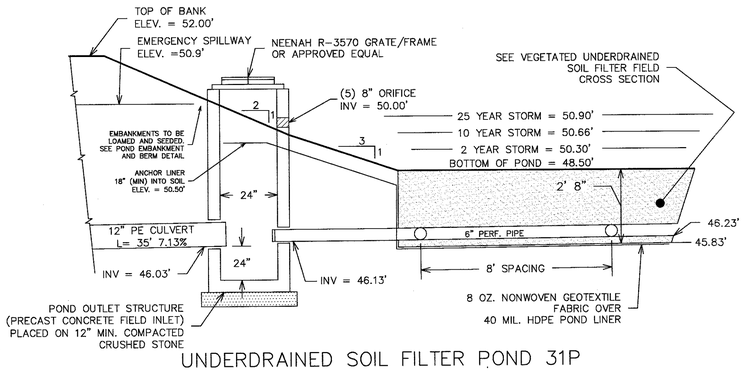
SCALE: AS SHOWN	APPROVED BY:	DRAWN BY: MJS
DATE: 1/18/2018		REVISION DATE: – : –
JOB NO: C052-18	FILE: MBRIGHAM DET.DWG	SHEET: 5.1

MAP 24 / LOT 60

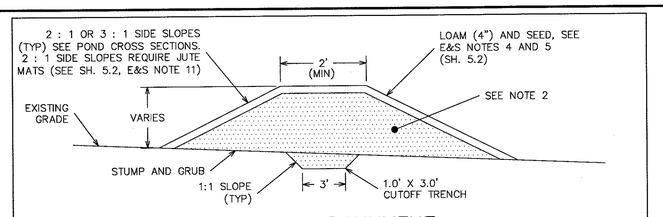

FRAME AND COVER NEENAH R-1743 STAMPED "SEWER"
ADJUST TO GRADE WITH BRICKS LAID FLAT MIN. 1 COURSE MAX. 3 COURSES
24"
1/2" MAX MORTAR JOINT
STANDARD COVER AND FRAME
SCALE: NTS
8"
24"
CONE (2' - 4')
PRECAST CONCRETE SECTIONS (TYP)
BARREL (VARIES)
EXTERIOR WATERPROOFING
JOINT W/BUTYL RUBBER SEALANT
5"
BASE (VARIES)
1" / FT
6"
6" MIN
BRICK OR CONCRETE CHANNEL
6" SCREENED GRAVEL OR CRUSHED STONE
4'
TYPICAL SANITARY MANHOLE
SCALE: NTS
INSIDE FACE OF MANHOLE
PVC PIPE
ANODIZED ALUMINUM INTERNAL CLAMP
STAINLESS STEEL CLAMP
FILL W/NON-SHRINK GROUT
RUBBER-LIKE KOR-N-SEAL BOOT OR EQUIVALENT
TYPICAL BOOT GASKET
SCALE: NTS
LOAM AND SEED AS REQUIRED
PAVEMENT AS REQUIRED
DRIVEWAY STRUCTURE
COMPACTED SAND OR GRAVEL
12"
SAND
6"
1/2" - 1 1/2" CRUSHED STONE OR SCREENED GRAVEL
NATIVE SOIL
DRAINAGE PIPE TRENCH DETAIL
SCALE: NTS
TRENCH TO BE SUPPORTED BY SLOPING BACK AT 2:1 OR OTHER ACCEPTABLE METHOD.
LOAM AND SEED AS REQUIRED
PAVEMENT AS REQUIRED (SEE DETAIL)
DRIVEWAY STRUCTURE
VARIES
SAND OR GRAVEL COMPACTED IN 12" LIFTS
INSULATION AS SPECIFIED ON PLANS AND PROFILES
12" (MIN)
SAND BLANKET COMPACTED IN 6" LIFTS
6"(MIN)
SCREENED GRAVEL BEDDING COMPACTED IN 6" LIFTS
NATIVE SOIL
4/3 (PIPE I.D.) + 1.5' (3.0' MIN)
SEWER PIPE TRENCH DETAIL
SCALE: NTS
TRENCH TO BE SUPPORTED BY SLOPING BACK AT 2:1 OR OTHER ACCEPTABLE METHOD.
PAVED AREA
NON-PAVED AREA
COMPACTED BACKFILL SUITABLE TO K.W.D. 12" MAX. LIFTS.
5' (MIN)
COMPACTED SAND BEDDING 6" MAX. LIFTS
6'
6"
PIPE O.D.
PIPE OD + 24"
WATER LINE TRENCH DETAIL
(NTS)
AS NOTED
PROPOSED GRADE
TEE IN WATER MAIN
ADJUSTABLE VALVE BOX
5' MIN
WOOD OR CONCRETE BLOCKS
6" GATE VALVE
6" DI PIPE
6" DI PIPE
CONCRETE SETTING BLOCK
SETTING BLOCK AGAINST UNDISTURBED MATERIAL MIN 2'SQUARE AT BOTTOM (TYP ALL BRIDLES VALVES)
MEGALUG RETAINER GLAND OR APPROVED EQUAL (TYP)
CONCRETE THRUST BLOCK-AREA AGAINST UNDISTURBED MATERIAL TO BE 5 S.F. MIN.
HYDRANT & VALVE DETAIL
NTS
DRIVEWAY STRUCTURE
SIDE SLOPE VARIES (2:1 MAX.)
18"
4'
CULVERT (SIZE VARIES)
GEOTEXTILE LAYER NICOLON MIRAFI 180N OR EQUAL
RIP RAP d50 = 6"
CULVERT INLET/OUTLET PROTECTION DETAIL
(NTS)
ROAD STRUCTURE
GRATE AND FRAME RATED FOR HS-25 WHEEL LOAD
1.0% MIN
1.0% MIN
ADJUST TO GRADE WITH BRICK IF NECESSARY 3 COURSES MAX.
BUTYL RUBBER SEALANT IN JOINTS.
4'
PRECAST CONCRETE CATCH BASIN. SECTION HEIGHTS VARY AS NECESSARY.
WATERTIGHT JOINT (TYP)
FLOW
CULVERT
PE CULVERT
12"
5"
24"
6"
PLACE BASIN ON 12" COMPACTED 3/4" STONE
CATCH BASIN DETAIL
(NTS)
FINISHED GRADE
ADJUST TO GRADE
12" MIN.
COPPER LINE (SEE PLANS FOR SIZE
5.0' (MIN)
COPPER LINE (SEE PLANS FOR SIZE)
SERVICE GATE BOX W/ STAINLESS STEEL ROD & COTTER PIN
WATER MAIN
1" CORPORATION STOP (COMPRESSION)
1" CURB STOP BALL VALVE (COMPRESSION)
WOOD BLOCKING FOR CURB STOP AND SERVICE BOX SUPPORT
WATER BLOWOFF ASSEMBLY DETAIL
(NTS)
CORPORATION STOP. NO MORE THAN 4 THREADS EXPOSED ON INLET SIDE. SHUTOFF STEM TO FACE UP.
TAPPING SADDLE
SERVICE LINE
20' MIN / 30' MAX FROM HORIZONTAL
PVC DISTRIBUTION MAIN
SERVICE BOX & ROD
CORPORATION STOP
5.0'
INSULATE OVER SERVICE W/2" RIGID POLYSTYRENE IF COVER IS LESS THAN 5.0' (WITH PRIOR WATER DISTRICT APPROVAL)
1" COPPER SERVICE LINE
PVC DISTRIBUTION MAIN
CURB STOP BALL VALVE
1" COPPER SERVICE LINE
WOOD BLOCKING FOR CURB STOP AND SERVICE BOX SUPPORT
WATER SERVICE DETAIL
(NTS)
3" HOT MIX ASPHALT (SEE PLANS FOR LOCATION) (1" WEARING COURSE - 9.5MM) (2" BASE COURSE - 19.0MM)
3" GRAVEL BASE MDOT 703.10
3' WIDE GRAVEL SHOULDER BOTH SIDES
3'
20'
3'
5'
3H:1V SIDE SLOPES (4" LOAM AND SEED)
ROAD CROWN 1/4" PER FOOT
3
1
COMPACTED NATIVE SUBGRADE OR COMPACTED COMMON BORROW ON NATIVE SUBGRADE
5' SIDEWALK ONE SIDE OF ROAD
18" GRAVEL SUBBASE MDOT 703.06 TYPE D (6" MAX. STONE SIZE)
ROAD CROSS SECTION
SCALE: (NTS)
GRAVEL FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR
BACKFILL CAREFULLY TO AVOID DISTURBING CURB
LOAM & SEED
1 3/16"
7 1/2"
BITUMINOUS CONCRETE SLOPED BERM CURB
BITUMINOUS CONCRETE TOP COURSE
BITUMINOUS CONCRETE BASE COURSE
6" MIN
9"
CRUSHED GRAVEL BASE AND GRAVEL SUBBASE - EXTEND MINIMUM OF 6 INCHES BEYOND CURB
SEE PAVING DETAILS
BITUMINOUS CONCRETE CURB
(NTS)
12"
12"
6"
VAN ACCESSIBLE
4" WIDE PAINTED STRIPES, TWO COATS HIGHWAY WHITE
ADA CURB RAMP IF NECESSARY
IF APPLICABLE
ADA STANDARD SIGN OF ACCESSIBILITY (SEE DETAIL)
INTERNATIONAL SYMBOL OF ACCESSIBILITY (3' X 3'). WHITE ON BLUE BACKGROUND PER ADA STANDARDS.
SPACE TO BE LABELED "VAN ACCESSIBLE", IF NECESSARY
VAN ACCESSIBLE
SEE BELOW
9.0'
ACCESSIBLE PARKING SPACE DETAIL
AISLE SHALL BE 5' WIDE FOR AUTOMOBILES OR 8' WIDE FOR VANS
(NTS)
3" HOT MIX ASPHALT (1" WEARING COURSE - 9.5MM) (2" BASE COURSE - 19.0MM)
SAWCUT AND TACK JOINTS AT EXT. PAVEMENT (MATCH ELEVATION)
3" GRAVEL BASE (MDOT TYPE A)
15" GRAVEL SUBBASE (MDOT TYPE D)
EXISTING PAVEMENT
COMPACTED SUBGRADE
ASPHALT PARKING CROSS SECTION
(NTS)
GRAVEL FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR
PROVIDE INSULATION IF LESS THAN 4'-6"
1'-0" TO 3'-0"
CLEANOUT
6" PVC
WYE OR TEE
MIN. SLOPE 1/4" PER FOOT
BASEMENT FLOOR
SEWER MAIN
OBSERVATION TEE AND PLUG
FLEX JOINT AND ADAPTER PER APPLICABLE PLUMBING CODE
TYPICAL SERVICE CONNECTION AND HOUSE LATERAL DETAIL
SCALE: NTS
NOTE: HOUSE SEWER MAY BE LOCATED BENEATH BASEMENT FLOOR
5.2
SITE DETAILS
THE HOMESTEAD
459 U.S. ROUTE 1, KITTERY, MAINE
FOR: LANDMARK HILL, LLC.
79 CONGRESS STREET
PORTSMOUTH, NH 03801
ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128
SCALE: AS SHOWN
APPROVED BY:
DRAWN BY: MJS
DATE: 1/18/2018
REVISION DATE: - : -
JOB NO: C052-18
FILE: MBRIGHAM DET.DWG
SHEET: 5.2
NO.
DESCRIPTION
DATE
REVISIONS
STATE OF MAINE
KENNETH WOOD
LICENSED
MAP 24 / LOT 60



UNDERDRAINED SOIL FILTER POND 40P



UNDERDRAINED SOIL FILTER POND 31P



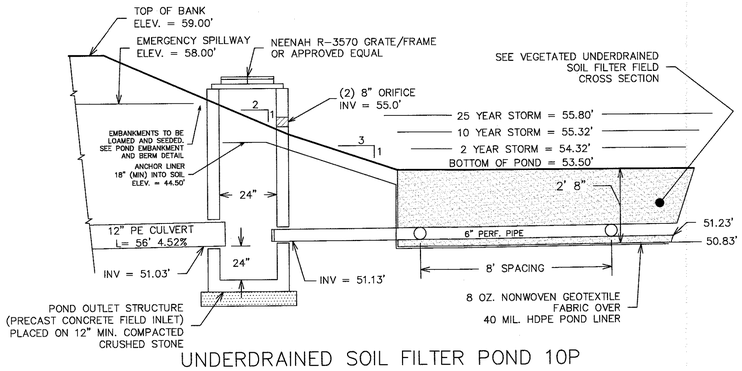
POND EMBANKMENT
AND BERM DETAIL
SCALE: 1" = 5'

EMBANKMENT CONSTRUCTION NOTES

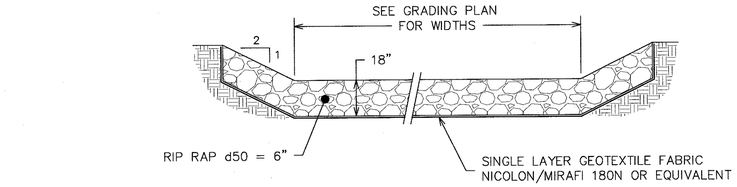
1. ALL ORGANIC MATERIAL, STUMPS, ROCKS AND BOULDERS SHALL BE REMOVED TO A MINIMUM DEPTH OF 24" BELOW SUBGRADE OF THE BASIN EMBANKMENT. ALL EXCAVATIONS BELOW THE BASIN EMBANKMENT SHALL HAVE A MINIMUM SLOPE OF 1H : 1V.

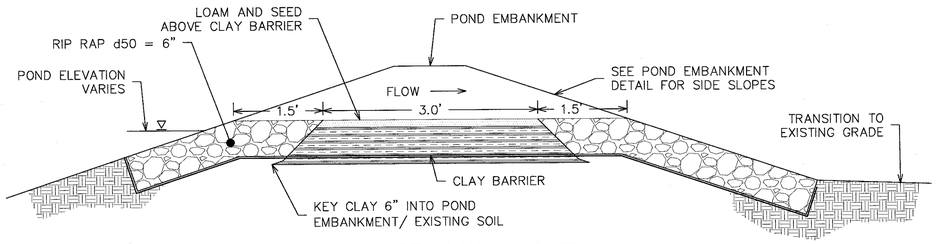
2. ALL BASIN EMBANKMENT FILL MATERIAL SHALL BE WELL GRADED BORROW WITH A MINIMUM OF 20% FINES CONTENT. EMBANKMENT FILL SHALL BE PLACED IN 12" (MAX.) LIFTS AND BE COMPACTED TO 95% MODIFIED PROCTOR. A CUTOFF TRENCH SHALL BE EXCAVATED AS SHOWN PRIOR TO CONSTRUCTION OF EMBANKMENT.

3. DETENTION BASIN AND ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER DURING CONSTRUCTION.

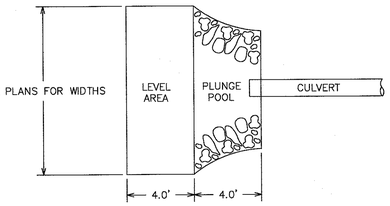


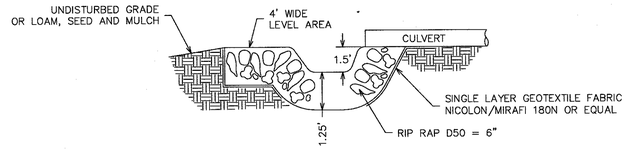
UNDERDRAINED SOIL FILTER POND 10P



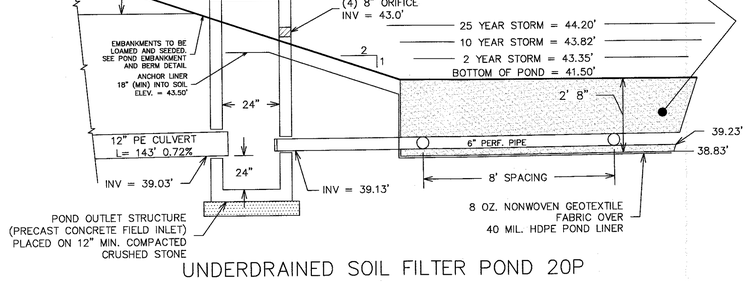


EMERGENCY SPILLWAY DETAIL

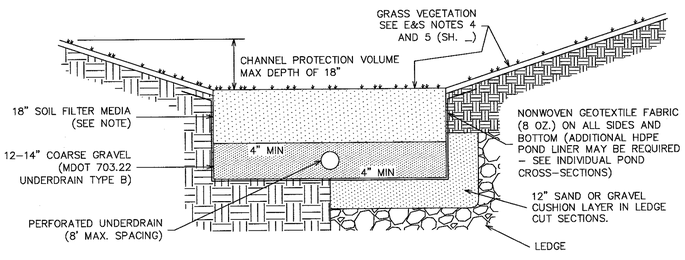




LEVEL SPREADER
(NTS)



UNDERDRAINED SOIL FILTER POND 20P



VEGETATED UNDERDRAINED SOIL FILTER FIELD CROSS SECTION
(APPLIES TO ALL USF PONDS)
(NTS)

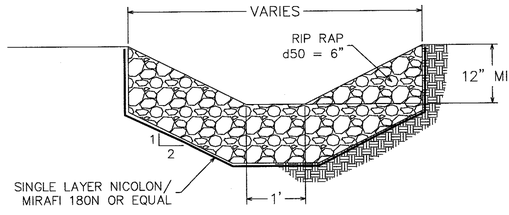
SOIL FILTER MEDIA NOTE:

THE SOIL FILTER MEDIA SHALL CONSIST OF A SILTY SAND OR SOIL MIXTURE COMBINED WITH 20% – 25% FINE SHREDDED BARK OR WOOD FIBER MULCH. THE MIXTURE MUST HAVE NO LESS THAN 8% PASSING THE 200 SIEVE, AND A CLAY CONTENT OF LESS THAN 2%. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST CHECK WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR UPDATED SOIL FILTER MEDIA SPECIFICATIONS.

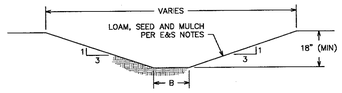
CONSTRUCTION OVERSIGHT REQUIRED:

INSPECTION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. AT A MINIMUM, INSPECTIONS WILL OCCUR:

- AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED;
- AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA;
- AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED;
- AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS; AND
- ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE INSPECTION SCHEDULE WITH INSPECTING ENGINEER PRIOR TO CONSTRUCTION.

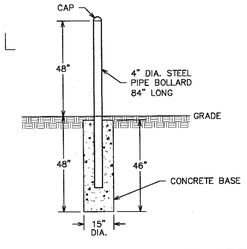


RIP RAP SWALE DETAIL
NTS

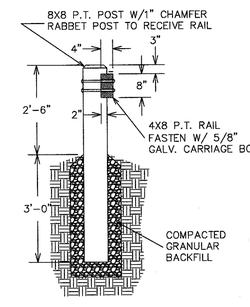


VEGETATED SWALE DETAIL
NTS

B (BOTTOM WIDTH) SHALL BE 2' FOR TYPE 1 SWALES AND 5' FOR TYPE 2 SWALES.



PROTECTIVE BOLLARD DETAIL
(NTS)



TIMBER GUARDRAIL DETAIL
(NTS)

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	3/27/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

5.3

SITE DETAILS
THE HOMESTEAD
459 U.S. ROUTE 1, KITTERY, MAINE

FOR: LANDMARK HILL, LLC.
79 CONGRESS STREET
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: AS SHOWN	APPROVED BY:	DRAWN BY: MJS
DATE: 1/18/2018		REVISION DATE: D: 3/27/2018
JOB NO: C052-18	FILE: MBRIGHAM DET.DWG	SHEET: 5.3

MAP 24 / LOT 60

M.S.H.C. R.O.W. MAP
S.H.C. FILE 18-81
Y.C.R.D. PLAN BK. 23, PG. 45

N/F SGT. TRAINING & DEVELOPMENT SPECIALISTS LLC
14154/783
60-34

N/F DAVID L. MEE
ELIZABETH G. CORMIER
LIFE ESTATE
13519/320
60-35

N/F ETHEL HOLT
1322/499
60-33

N/F STEPHEN G. TETREAULT
13942/35
60-32A

N/F WALLACE & GLADYS LAMONT
1928/126
60-32

N/F DEREK H. DEHAAN
STEPHANIE V. JONES
14540/746
60-30

N/F SUE A. COBLER
14858/833
60-31

N/F ANN BOWDEN
10243/136
60-28

N/F ROBERT & NANCY HUNDLEY
1431/32
60-26

N/F ERNEST & SHARON WISWELL
11638/253
66-10

ADAMS CEMETERY

N/F ERNEST WISWELL, TR.
9762/181
66-10A

N/F JEREMY B. SHEPARD
14573/176
66-11

TAX MAP & LOT NO. (TYP.)
66-12

N/F CLARA HORNING, TR.
HEATHER M. DITZEL
14938/329

N/F KITTERY COMMONS LLC
14672/843
60-25

N/F STEPHEN A. HYNES, TR.
REAL PROPERTY TRUST
AGREEMENT
7378/52
60-21

N/F ARTHUR W. FRANCIS
14095/433
66-13

N/F MARION D. LUCAS

N/F THOMAS R. WEST
1271/448
67-9

N/F DONALD C. & BARBARA J. WEST
1922/564
67-9A

N/F YORK COUNTY COUNSELING SERVICES, INC.
60-23

N/F RICHARD E. & IRENE M. VINTINNER
1991/113
60-22

N/F HAROLD L. DURGIN, TR. ET AL.
7358/132, 135 9378/42
10050/259
61-27

N/F BJP CORP.
12221/13
61-28

ADAMS ROAD (PUBLIC)

U.S. ROUTE ONE

RURAL RESIDENTIAL ZONE

MIXED USE ZONE

POND PER REF. PLAN 2

LOT 1
AREA =
1.056 ACRES

LOT 2
AREA =
1.150 ACRES

LOT 3
AREA =
1.338 ACRES

LOT 4
AREA =
1.028 ACRES

LOT 5
AREA =
1.004 ACRES

LOT 6
AREA =
3.978 ACRES

LOT 7
AREA =
20.127 ACRES

LIMITS OF PROPOSED PRIVATE SEWER EASEMENT

PROPOSED DRAINAGE EASEMENT

ACCESS RESTRICTED TO DRIVEWAY EASEMENT LOT 1

DRIVEWAY EASEMENT TO LOT 2

EXISTING BUILDING

PAVED PARKING AREA

PAVED DRIVEWAY

EDGE OF PAVEMENT

GRAVEL

LEWIS ROAD

DRILL HOLE FND.

ALUM. PIPE FND.

G.B. FND.

3/4" I.P. FND.

1/2" I.P. FND.

1" I.P. FND.

3/4" IRON PIPE FND.

1" I. ROD. FND.

D.H. FND.

NOTES:

1. The boundaries as delineated are the opinion of this surveyor and are based on record information and physical evidence. This plan does not purport title or ownership.

2. Field measurements for this survey were made using a Leica total station with electronic data collection. The relative precision of the unadjusted control traverse is better than 1 in 15,000.

3. The existence or non-existence, depth, size and location of underground utility lines, tanks, and structures was not verified by this survey. Any locations and sizes shown are approximate. Exact location should be further investigated before any excavation takes place on this lot.

4. Property is subject to pole easements; Y.C.R.D. Book 1424, pg. 267.

REFERENCE PLANS:

1. Plot Plan of Land of Kittery Convalescent Center; by Moulton Engineering Co.; dated March 17, 1976. Recorded at the Y.C.R.D. in Plan Book 80, page 1.

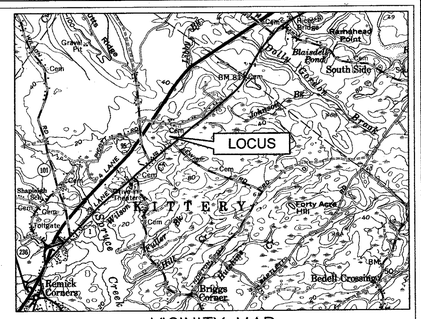
2. Site Plan, Sentry Commons Health Care Facility; by ATTAR Engineering, Inc.; dated April 20, 2000, revised September 28, 2000.

3. Standard Boundary Survey of Yankee Green Mobile Home Park; by Anderson-Livingston Engineers, Inc.; dated February 1995.

4. MDOT Right of Way Plan, State Highway "A", Project No. FI-01-1(5); dated December 1951. Recorded at the Y.C.R.D. in Plan Book 23, page 36.

5. ALTA/ACSM Land Title Survey for Sentry Commons, LLC; by Anderson-Livingston Engineers, Inc.; dated March 2001.

6. Division of Land for David M. Sowerby;; by Anderson-Livingston Engineers, Inc.; dated August 1997.



VICINITY MAP

BEARING TABLE		
LINE	BEARING	DIST
L1	S 01°57'16" E	44.39
L2	S 28°20'00" E	19.58
L3	S 28°07'30" E	77.88
L4	S 81°12'20" W	3.43
L5	N 08°34'48" E	46.62
L6	N 05°11'57" W	63.24
L7	N 00°21'24" W	68.54
L8	N 08°05'53" E	68.69
L9	S 77°06'20" E	54.19
L10	S 13°46'22" W	50.12
L11	S 88°11'01" E	44.40
L12	N 11°00'33" E	42.51
L13	S 82°23'52" E	24.39
L14	N 82°23'52" W	43.83
L15	N 78°21'23" W	52.97
L16	N 77°06'20" W	59.39
L17	N 77°06'20" W	16.40
L18	N 55°38'01" W	21.06
L19	S 12°14'31" W	45.25
L20	N 79°30'24" W	36.02
L21	N 12°14'31" E	54.72

REFERENCE DEEDS:

1. David M. Sowerby and Suzanne Sowerby to DSS Land Holdings, LLC; dated March 28, 1996. Recorded at the Y.C.R.D. in Book 7784, page 66.

2. Arnold F. & Jean S. Dickinson to Sentry Commons, LLC; dated July 28, 2000. Recorded at the Y.C.R.D. in Book 10147, page 184.

3. Marion D. Lucas to the State of Maine; dated April 24, 1952. Recorded at the Y.C.R.D. in Book 1205, page 527.

4. Rose E. Adams to the State of Maine; dated March 13, 1952. Recorded at the Y.C.R.D. in Book 1204, page 324.

LEGEND
- UTILITY POLE
- STONE WALL
- N/F "NOW OR FORMERLY"
- HYDRANT
- WATER SHUT OFF
- WATER GATE
- MONUMENT TO BE SET
- GRANITE BOUND FOUND

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 80 ft.

Approved by the Planning Board of KITTERY, MAINE

CHAIR _____ DATE _____

SUBDIVISION PLAN
FOR
DSS LAND HOLDINGS, LLC
U.S. ROUTE ONE &
ADAMS ROAD
KITTERY, MAINE

STATE OF MAINE
WILLIAM HENRY ANDERSON, JR.
1197
REGISTERED PROFESSIONAL LAND SURVEYOR

CERTIFICATION:
This survey conforms to the Maine Board of Licensure for Professional Land Surveyors Chapter 90 Standards of Practice, effective April 1, 2001 except as noted on this plan.

ANDERSON LIVINGSTON ENGINEERS, INC.
Suite 401 Cottage Place
433 II U.S. Route One
York, Maine 03909

Scale: 1 in = 80 ft.
Date: September 14, 2007
REVISIONS:

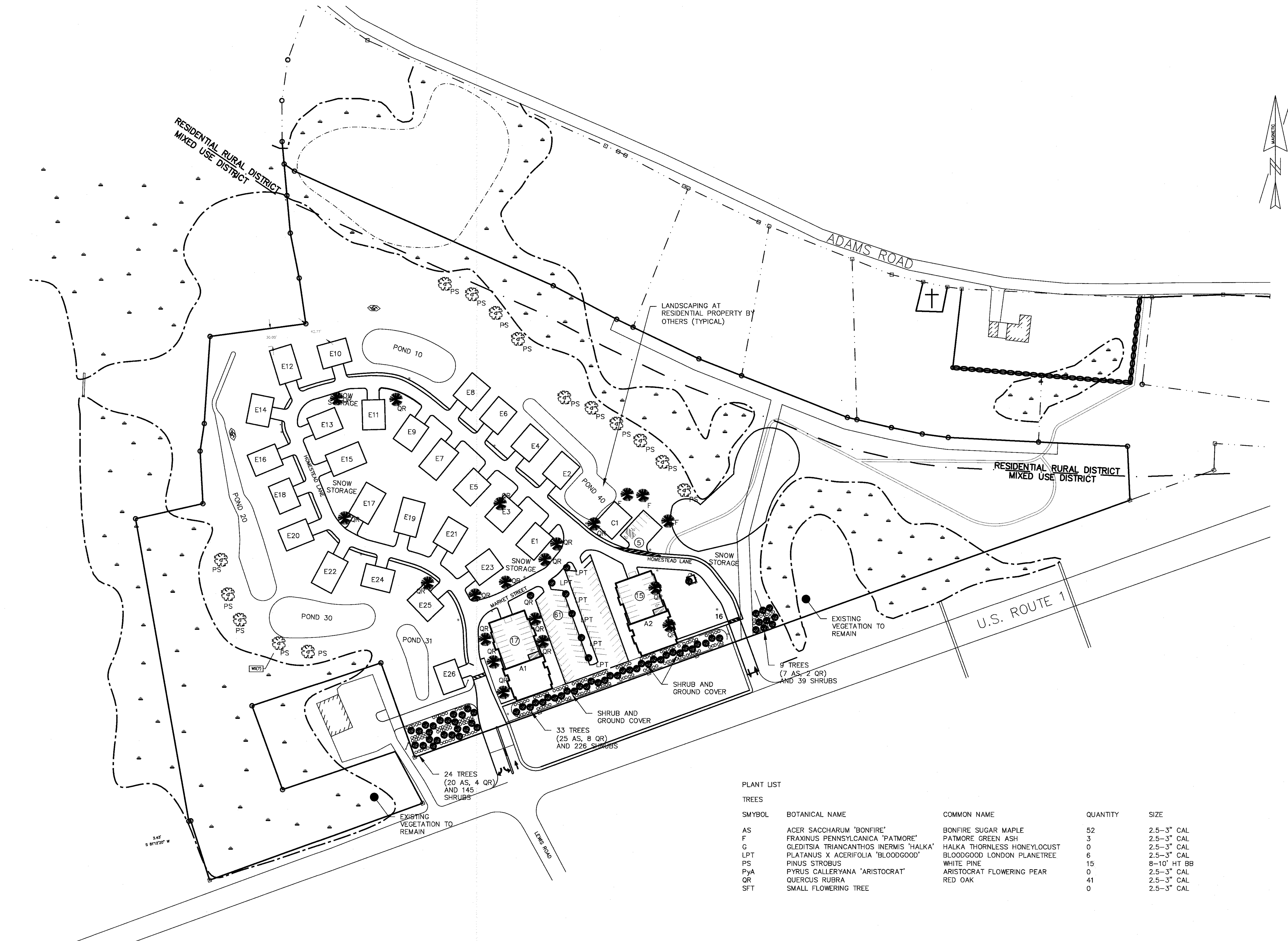
OWNER:
DSS Land Holdings, LLC
P.O. Box 242
York, ME 03909

Sheet 1 of 1 6.1

FILE NO: 4872.004
PLAN NO: 1516.070901

MAP 24 / LOT 60

\\Scott\projects\proj4000\4872A\dwg\4872AR bndry.dwg



LANDSCAPING NOTES

1) THE CONTRACTOR SHAL FOLLOW BEST MANAGEMENT PRACTICES DURING CONSTRUCTION AND SHALL TAKE ALL MEANS NECESSARY TO STABILIZE AND PROTECT THE SITE FROM EROSION.
2) EROSION CONTROL SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
3) EROSION CONTROL TO CONSIST OF HAY BALES AND EROSION CONTROL FABRIC SHALL BE STAKED IN PLACE BETWEEN THE WORK AND WATER BODIES, WETLANDS AND/OR DRAINAGE WAYS PRIOR TO ANY CONSTRUCTION.
4) THE CONTRACTOR SHALL VERIFY LAYOUT AND GRADES AND INFORM THE LANDSCAPE ARCHITECT OR CLIENT'S REPRESENTATIVE OF ANY DISCREPANCIES OR CHANGES IN LAYOUT AND/OR GRADE RELATIONSHIPS PRIOR TO CONSTRUCTION.
5) THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF ALL UTILITIES WITH RESPECTIVE UTILITY OWNERS PRIOR TO CONSTRUCTION. CALL DIGSAFE AT 1-888-344-7233.
6) THE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR NOT LESS THAN TWO YEARS FROM THE TIME OF ACCEPTANCE.
7) ALL LANDSCAPING SHALL BE PROVIDED WITH EITHER OF THE FOLLOWING:
   7)1) AN UNDERGROUND SPRINKLER SYSTEM
   7)2) AN OUTSIDE HOSE ATTACHMENT WITHIN 150 FEET
8) TREES, GROUND COVER, AND SHRUB BEDS SHALL BE MULCHED TO A DEPTH OF 2" WITH ONE-YEAR-OLD, WELL-COMPOSTED, SHREDDED NATIVE BARK NOT LONGER THAN 4" IN LENGTH AND 1/2" IN WIDTH, FREE OF WOODCHIPS AND SAW DUST. MULCH FOR FERNS AND HERBACEOUS PERENNIALS SHALL BE NO LONGER THAN 1" IN LENGTH. TREES IN LAWN AREAS SHALL BE MULCHED IN A 5' DIAMETER MIN. SAUCER.
9) ALL DISTURBED AREAS WILL BE DRESSED WITH 4" OF TOPSOIL AND PLANTED AS NOTED ON THE PLANS OR SEEDED EXCEPT PLANT BEDS. PLANT BEDS SHALL BE PREPARED TO A DEPTH OF 12" WITH 75% LOAM AND 25% COMPOST.

PLANT LIST

TREES

SMYBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
AS	ACER SACCHARUM 'BONFIRE'	BONFIRE SUGAR MAPLE	52	2.5-3" CAL
F	FRAXINUS PENNSYLCANICA 'PATMORE'	PATMORE GREEN ASH	3	2.5-3" CAL
G	GLEDITSIA TRIANCANTHOS INERMIS 'HALKA'	HALKA THORNLESS HONEYLOCUST	0	2.5-3" CAL
LPT	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANETREE	6	2.5-3" CAL
PS	PINUS STROBUS	WHITE PINE	15	8-10' HT BB
PyA	PYRUS CALLERYANA 'ARISTOCRAT'	ARISTOCRAT FLOWERING PEAR	0	2.5-3" CAL
QR	QUERCUS RUBRA	RED OAK	41	2.5-3" CAL
SFT	SMALL FLOWERING TREE		0	2.5-3" CAL

LEGEND

NEW SETBACK		UNDER GROUND UTILITIES	PUGU	DRAINAGE STRUCTURE	
DESIGNATED OPEN SPACE		SEWER MANHOLE		WATER VALVE	
PROPERTY LINE		EXISTING WATER LINE	EW	WATER SHUT OFF	
EXISTING CONTOUR	XXX	EXISTING SEWER LINE	ES	HYDRANT	
PROPOSED CONTOUR	XXX	UTILITY POLE		RETAINING WALL	RTW
PROPOSED WATER LINE	PW	IRON PIN		VERTICAL GRANITE CURB	
PROPOSED SEWER LINE	PS	STONE MONUMENT			

GRAPHIC SCALE

0 80 160 240 320 (FEET)

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

6.2

LANDSCAPING PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'	APPROVED BY:	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 6.2

TAX MAP 24, LOT 60

LEGEND

WETLAND/SOIL BNDY.	UPLAND / WETLAND
EXT. CONTOUR	XXX
PRP. CONTOUR	XXX
SUBCATCHMENT BNDY.	
SOIL TYPE BOUNDARY	
Tc PATH	FLOW TYPE/LENGTH

SOILS LEGEND

- Ad – HSG A
- Cn – HSG C
- Cr – HSG A
- Hm – HSG A
- Du – HSG B
- Fn – HSG C
- Sr – HSG D
- Ur – HSG D

FLOW TYPES

SF – SHEET FLOW

SCF – SHALLOW CONCENTRATED FLOW

CF – CHANNEL FLOW

NOTE: ON-SITE SOILS INFORMATION IS TAKEN FROM CLASS A HIGH INTENSITY SOIL SURVEY PREPARED BY MICHAEL CUOMO, ME CSS #211 (SOIL REPORT DATED OCTOBER 2016). ELSEWHERE, SOILS INFORMATION IS TAKEN FROM THE YORK COUNTY SOIL SURVEY.

- 1 – SUBCATCHMENT
- 1R – REACH
- 1 – POND
- 1 – ANALYSIS POINT

GRAPHIC SCALE

0 80 160 240 320 (FEET)

NO.	DESCRIPTION	DATE
	REVISIONS	
A	PRELIMINARY PLAN REVISION	1/18/2018
B	SW POND ADJUSTMENT	02/06/2018
C	SW POND ADJUSTMENT	02/08/2018
D	PRELIMINARY PLAN REVISION	03/27/2018

STATE OF MAINE
KENNETH M. WOOD
3982
REGISTERED
PROFESSIONAL
ENGINEER
CIVIL

7.1

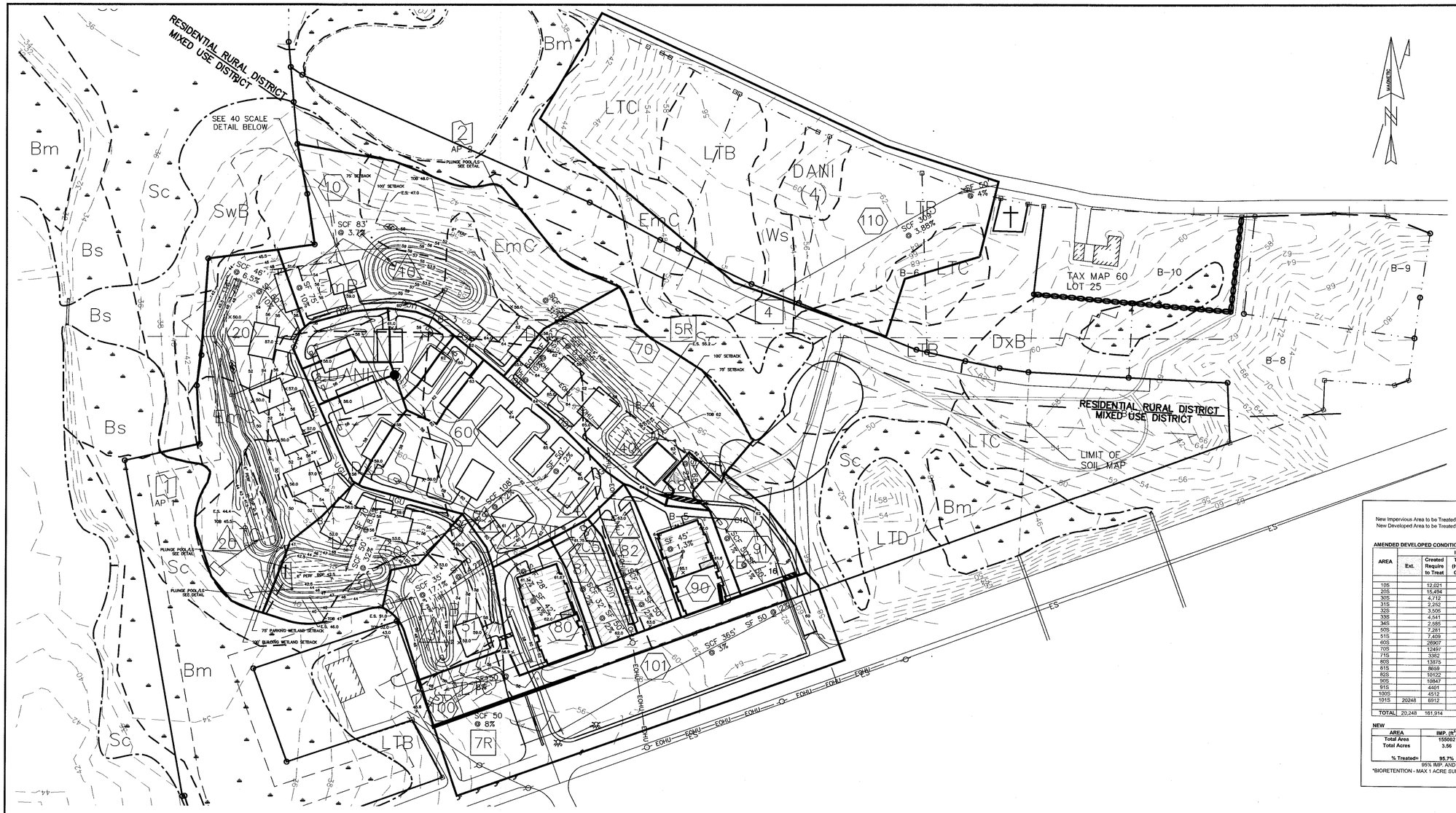
STORMWATER: EXISTING CONDITIONS
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR:
LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'	APPROVED BY: 3/27/2018	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE D: 03/27/2018
JOB NO: C052-18	CAD FILE: MBRIGHAM LBASE	SHEET 7.1

TAX MAP 24, LOT 60



STORMWATER SUBCATCHMENTS 30 TO 34 DETAIL

40 SCALE

POND SIZING CALCULATIONS

AREA	IMP. (ft²)	LA. (ft²)	RA. (ft²)	BMP	CPV (ft³)	P. POOL (ft³)	CHECK
Pond 10				**Soil Filter**			
10S	12,021	36,095			2,205	N/A	
32S	3,505	4,568			444		
34S	2,585	4,752			374		
Total	18,111	45,415			3,023	N/A	
				5% Impervious + 2% Landscaped Area =	1,814		
				5% Impervious + 2% Remaining Area =	1,814		
				Provided CPV =	5,758		OK
				Provided Area =	3157		OK
Pond 20				**Soil Filter**			
20S	15,494	53,014			3,058	N/A	
30S	4,712	4,612			546		
31S	2,252	3,781			314		
33S	4,541	6,894			608		
Total	26,999	68,301	0		4,527	N/A	0.00
				5% Impervious + 2% Landscaped Area =	2,716		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	6,314		OK
				Provided Area =	3,014		OK
Pond 30				**Soil Filter**			
50S	7,281	27,875			1,536		
60S	26,907	33,945			3,374		
81S	8,659	3,850			850		
82S	10,122	4,114			981		
90S	10,847	5,381			1,083		
Total	63,816	75,165			7,824	N/A	
				5% Impervious + 2% Landscaped Area =	4,694		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	8,286		OK
				Provided Area =	4,718		OK
Pond 31				**Soil Filter**			
51S	7,409	20,389			1,297		
80S	13,875	6,627			1,377		
100S	4,512	18,441			991		
Total	25,796	45,457			3,665	N/A	0.00
				5% Impervious + 2% Landscaped Area =	2,199		
				5% Impervious + 2% Remaining Area =	2,199		
				Provided CPV =	4,800		OK
				Provided Area =	2,434		OK
Pond 40				**Soil Filter**			
70S	12,497	19,664			1,697	N/A	
71S	3,382	0			282		
91S	4,401	10,590			720		
Total	20,280	30,254	0		2,698	N/A	0.00
				5% Impervious + 2% Landscaped Area =	1,619		
				5% Impervious + 2% Remaining Area =	1,619		
				Provided CPV =	4,108		OK
				Provided Area =	2,295		OK

TREATMENT CALCULATIONS

New Impervious Area to be Treated @95%	161,914	sf	3.72 Acres
New Developed Area to be Treated @80%	426,506	sf	9.79 Acres

AMENDED DEVELOPED CONDITIONS:

AREA	IMP. (ft²)					LA. (ft²)					DEV. (ft²)				
	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext. (HCAD)	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated
10S		12,021		12,021	0		36,095		36,095	0	12,021	48,116	0	48,116	0
20S		15,494		15,494	0		53,014		53,014	0	15,494	68,508	0	68,508	0
30S		4,712		4,712	0		4,612		4,612	0	4,712	9,324	0	9,324	0
31S		2,252		2,252	0		3,781		3,781	0		6,033	0	6,033	0
32S		3,505		3,505	0		4,568		4,568	0		8,073	0	8,073	0
33S		4,541		4,541	0		6,894		6,894	0		11,435	0	11,435	0
34S		2,585		2,585	0		4,752		4,752	0		7,337	0	7,337	0
50S		7,281		7,281	0		27,875		27,875	0		35,156	0	35,156	0
51S		7,409		7,409	0		20,389		20,389	0		27,798		27,798	0
60S		26907		26907	0		33945		33945	0		60852		60852	0
70S		12497		12497	0		19664		19664	0		32161		32161	0
71S		3382		3382	0		0		0	0		3382		3382	0
80S		13875		13875	0		6627		6627	0		20502		20502	0
81S		8659		8659	0		3850		3850	0		12509		12509	0
82S		10122		10122	0		4114		4114	0		14236		14236	0
90S		10847		10847	0		5381		5381	0		16228		16228	0
91S		4401		4401	0		10590		10590	0		14991		14991	0
100S		4512		4512	0		18441		18441	0		22953		22953	0
101S	20248	6912		0	6912	50736	0		0	0		6912		0	6912
TOTAL	20,248	161,914	0	155,002	6,912	50,736	264,592	0	264,592	0	70,984	426,506	0	**419,594**	6,912

NEW

AREA	IMP. (ft²)	DEV (ft²)
Total Area	155002	419594
Total Acres	3.56	9.63
% Treated=	95.7%	98.4%

95% IMP. AND 80% DEV IS REQUIRED

*BIORETENTION - MAX 1 ACRE SUBCATCHMENT, BOP<2000 S.F.

TABLE 1 - QUANTITY CALCULATIONS

		STORM EVENT 2	10	25
EXISTING	**AP 1**	11.63	23.54	33.88
	AP 2	7.15	16.04	27.67
DEVELOPED	**AP 1**	8.45	22.61	29.68
	AP 2	6.13	15.27	23.56
CHANGE	**AP 1**	-3.18	-0.93	-4.20
	AP 2	-1.02	-0.77	-4.11

LEGEND

WETLAND/SOIL BNDY.	UPLAND / WETLAND
EXT. CONTOUR	— — — XXX — — —
PRP. CONTOUR	——— XXX ———
SUBCATCHMENT BNDY.	━━━━
SOIL TYPE BOUNDARY	▬ ▬ ▬ ▬
Tc PATH	FLOW TYPE/LENGTH →

SOILS LEGEND

Ad	HSG A
Cn	HSG C
Cr	HSG A
Hm	HSG A
Du	HSG B
Fn	HSG C
Sr	HSG D
Ur	HSG D

FLOW TYPES

SF – SHEET FLOW

SCF – SHALLOW CONCENTRATED FLOW

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⬡ 1	SUBCATCHMENT
▢ 1R	REACH
△ 1	POND
1	ANALYSIS POINT

NO.	DESCRIPTION	DATE
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

REVISIONS

KENNETH WOOD

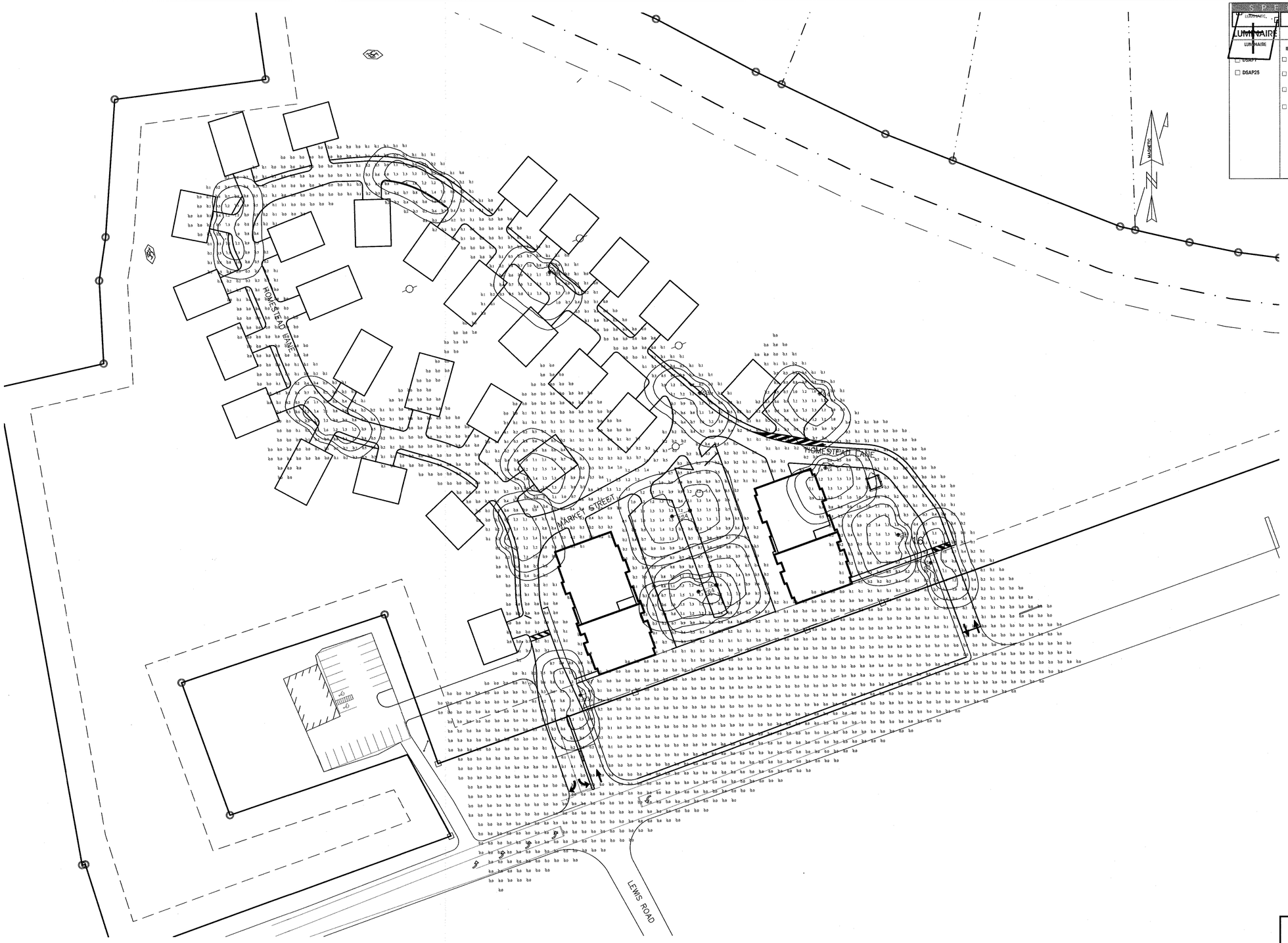
7.2

STORMWATER: PROPOSED CONDITIONS
THE HOMESTEAD
459 US ROUTE 1 KITTERY, MAINE

FOR:
LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'
DATE: 02/08/2018
APPROVED BY: 3/27/2018
DRAWN BY: BRN
REVISION : DATE D: 03/27/2018
JOB NO: C052-18
CAD FILE: MBRIGHAM LBASE
SHEET 7.2
TAX MAP 24, LOT 60



SPEC/ORDERING INFORMATION

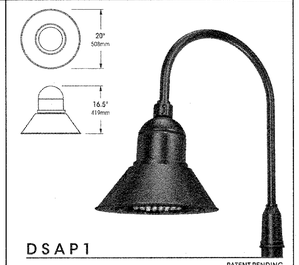
LUMINAIRE

LUMINAIRE	OPTICS	# of LED's	DRIVE CURRENT	COLOR	VOLTAGE	MOUNTING	FINISH	OPTIONS
DSAP1	VLED IES DISTRIBUTION TYPE	DSAP1				ARM MOUNT	STANDARD TEXTURED FINISH	
DSAP25	VLED - II (Type II)	80LED[1]	700mA	NW (4000K) *STANDARD	120	XPD	BLACK RAL-9005-T	HOUSE SIDE SHIELDED REFLECTOR PDSM45 ..... HS-VLED
	VLED - III (Type III)	64LED[1]	525mA	CW (5000K)	208	XPK	WHITE RAL-9003-T	PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) ..... PC+V
	VLED - IV (Type IV)	48LED	350mA	WW (3000K)	240	1	GREY RAL-7004-T	TWIST LOCK PHOTO CELL+VOLTAGE (EXAMPLE TPC120V) ..... TPC+V
	VLED - VSQ (Type VSQ)	DSAP25		OTHER LED COLORS AVAILABLE CONSULT FACTORY	277	WALLMOUNT	DARK BRONZE RAL-80197	TWIST LOCK RECEPTACLE ONLY ..... TPR
		120LED[1]			347	WM	GREEN RAL-6005-T	SINGLE FUSE (120V., 277V.) ..... SF
		100LED[1]			480		FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9500-S)	DOUBLE FUSE (208V., 240V.) ..... DF
		80LED						
		64LED						

[1] NOTE: 1=NOT AVAILABLE IN 700mA

SEE LSIALTG.COM FOR ADDITIONAL ARM STYLES

SEE LSIALTG.COM FOR ADDITIONAL COLORS



DSAP1

PATENT PENDING

GENERAL NOTES

1. PHOTOMETRIC PLAN AND LIGHTING FIXTURES/SPECIFICATIONS PREPARED BY:

   CHARRON, INC.
   P.O. BOX 4550
   MANCHESTER, NH 03108

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	7	S3	SINGLE	DSAP1-III-48VLED-NW-525mA-HS / XPD1 / RNTS204-11-PT27
	6	S4	SINGLE	DSAP1-IV-48VLED-NW-525mA-HS / XPD1 / RNTS204-11-PT27
	2	2S4	BACK-BACK	2 @ 180 DEG - 2DSAP1-IV-48VLED-NW-525mA-HS / XPD2 / RNTS204-11-PT27

GRAPHIC SCALE

0 50 100 150 200 (FEET)

NO.	DESCRIPTION	DATE
	REVISIONS	
A	PRELIMINARY PLAN REVISION	3/28/2018

8.1

PHOTOMETRIC PLAN
THE HOMESTEAD
459 U.S. ROUTE 1, KITTERY, MAINE

FOR: LANDMARK HILL, LLC.
79 CONGRESS STREET
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 50'		MJS
DATE:		REVISION DATE:
1/18/2018		– : –
JOB NO: C052-18	FILE: MBRIGHAM LBASE (2).DWG	SHEET: 8.1

MAP 24 / LOT 60

MIXED USE-RESIDENTIAL

ELDERLY -SINGLE FAMILY